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usda [ STATISTICAL ANALYSIS OF COTTON BALE WEIGHTS ] fc

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March 1981



## TABLE OF CONTENTS

<u>Heading</u>	<u>Page</u>
Part I - General Observations	
Introduction	I-1
Results	I-2
Averages & Variations	I-5
Part II - Details of the Analysis	
Observations	II-1
Details of Statistical Analysis	II-2
i) Test of Null Hypothesis	
ii) Determination of Differences in Variances	
iii) Determination of Differences in Means	
Part III - Appendices	
A Printouts	
B Histograms and Frequency Tables	



Number of days

Percentage of days

0 - 100% 100 - 110%

100 - 100% 110 - 110%

0

100

110

## PART 1: General Observations



Figures & Tables  
in Text 1/

	<u>Page</u>
Table 1 : Number of Bales .....	I-2
Table 2 : Percentage of Bales Between 460 and 539 lbs .....	I-2
Table 3 : Frequency Distribution .....	I-3
Table 4 : Average Bale Weights .....	I-6
Table 5 : CV's .....	I-6
Table 6 : Simultaneous Test On State Means .....	II-6
Table 7 : Relationships Between States .....	II-3
Figure 1 : Percentage Bar Chart .....	I-4
Figure 2 : CV's .....	I-5

1/ Appendix tables not listed separately



Introduction

Various participants in the cotton industry have requested that the Cotton Division of the USDA Agricultural Marketing Service analyze the latest available data on cotton bale weights. This study is a response to those informal requests.

The bale weights utilized in the study come from the annual "Ginning Charges and Related Data" survey. Unfortunately not all gins charge by bale weights. The result is that only seven states are represented within the sample. Although two principal producers, California and Mississippi, are not represented, it is felt that the sample is adequate for drawing valid conclusions. There are 14,229 bales in the sample. Three crop years, 1977 to 1979, are covered. The area represented produced some 60% of U.S. Upland cotton in 1978. It should be noted that the data available from Texas was so disproportionately large that a sample was drawn from the Texas sample. Table 1 gives the sample sizes for each state, and for each year.



State	Crop Years					% of U.S. Production State Accounted for in 1978
	No. of Bales in Sample	1977	1978	1979	Total	
Arkansas	:	322	32	695	1049	6%
Arizona	:	1053	1053	181	2287	10%
Louisiana	:	126	366	138	630	4%
Missouri	:	350	184	426	960	2%
New Mexico	:	744	330	627	1701	1%
Oklahoma	:	1451	1773	1700	4924	3%
Texas	:	861	782	1053	2678	35%
Total	:	4907	4520	4802	14229	61%
	:					

Table 1. Number of bales sampled by state and year

Results

The full three year sample reflected a high degree of normality. The mean, median, and mode were 499 lbs., 501 lbs., and 500 lbs. respectively. (see Table Al- Appendix A). This is quite close considering that the range from the lightest to the heaviest was 424 lbs. The lightest bales weighed in at a bit more than 300 lbs. and the heaviest bales went from about 650 lbs. to a high of 724 lbs.

Over the three year period, the vast majority of the bales were between 460 lbs. and 539 lbs. Table 2 indicates to what degree.

% in 460 to 539 lbs. range (rounded)

Arkansas	68
Arizona	72
Louisiana	65
Missouri	71
New Mexico	76
Oklahoma	78
Texas	84
All Seven States	76

Table 2. Percentage of bales between 460 and 539 lbs. for the 7 states

Assuming a relatively normal distribution of bale weights for the combined states, the above table implies that roughly 12% of the bales would be less than 460 lbs. and 12% more than 539 lbs. and 8% would be lower than 460 lbs.



Table 3 below presents a frequency distribution of the bale weights analyzed. The histogram in figure 1 gives a good appreciation for the nature of the distribution.

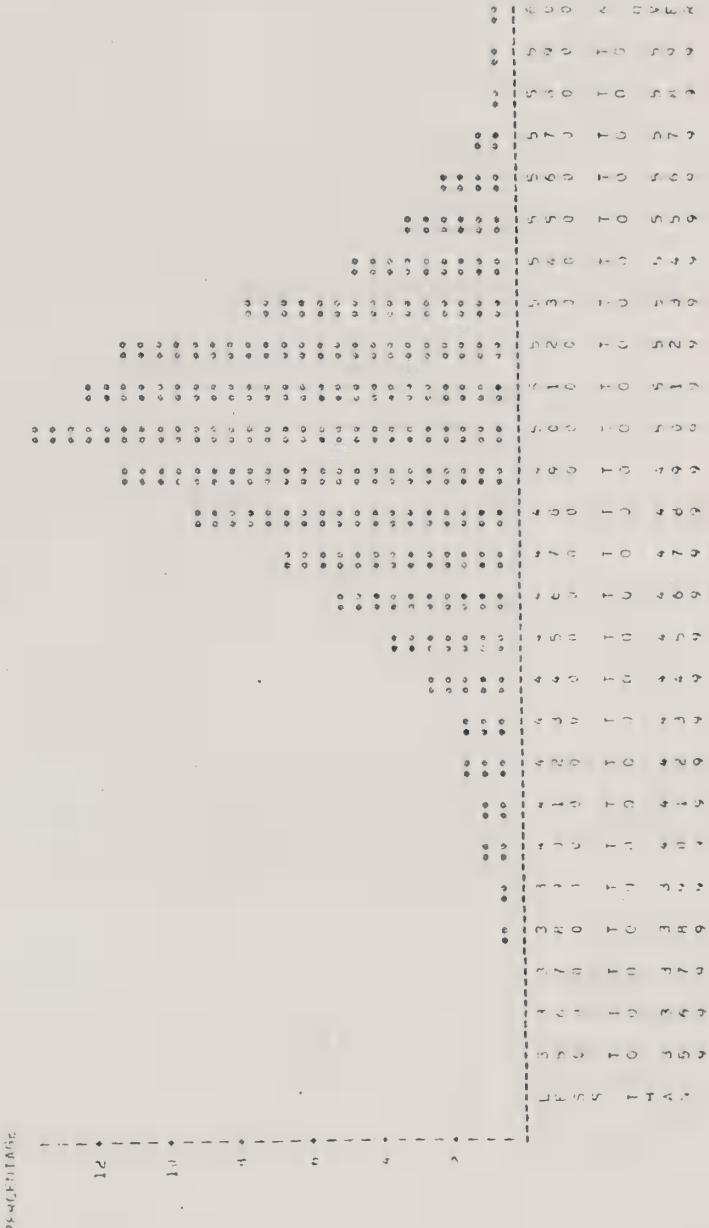
Table 3. Frequency distribution of bale weights for the 7 states

Weight Intervals	STATES							
	All Seven States	Arkansas	Arizona	Louisiana	Missouri	N. Mexico	Oklahoma	Texas
330 & Below	0.2	0.4	0.2	0.6	0.2	0.1	0.2	0
350-359	0.1	0.2	0.2	0.5	0.1	0	0	0
360-369	0.2	0.4	0.3	0.8	0.3	0.6	0.1	0
370-379	0.2	0.5	0.2	0.5	0.2	0.6	0.1	0
380-389	0.3	0.8	0.4	0.8	0.6	0.2	0.2	0.2
390-399	0.4	0.7	0.7	0.3	0.5	0.2	0.3	0.1
400-409	0.8	1.7	0.9	2.5	0.7	0.4	0.6	0.6
410-419	1.1	1.7	0.8	2.7	1.7	0.6	1.0	0.9
420-429	1.7	2.3	1.6	4.0	1.9	1.5	1.7	0.9
430-439	1.5	3.0	1.7	2.1	1.9	1.9	1.1	0.9
440-449	2.6	4.7	2.4	3.3	3.2	2.2	2.3	2.5
450-459	3.5	5.2	3.2	3.7	3.8	3.7	2.7	3.5
460-469	5.1	7.3	3.9	4.9	7.4	6.9	3.8	7.0
470-479	6.6	9.2	5.4	6.7	8.8	6.2	5.8	7.7
480-489	9.1	10.5	6.7	9.5	8.0	9.3	9.2	10.9
490-499	11.1	10.7	9.5	8.1	10.4	11.0	11.8	12.4
500-509	13.4	10.2	12.1	14.3	12.3	14.8	13.1	15.4
510-519	12.2	8.5	12.8	11.1	10.5	12.2	12.7	13.1
520-529	10.9	6.6	12.3	6.4	7.3	9.1	12.9	11.0
530-539	7.8	3.0	9.1	3.7	3.9	8.3	9.0	6.6
540-549	4.6	2.8	3.3	3.3	4.0	5.7	5.1	3.4
550-559	2.8	4.0	3.6	2.4	3.2	3.0	2.7	1.4
560-569	1.8	1.1	2.5	3.0	2.0	2.4	1.8	0.5
570-579	1.1	0.5	2.0	2.5	1.4	0.9	0.9	0.4
580-589	0.6	0.6	1.3	1.0	0.5	0.6	0.5	0.1
590-599	0.3	0.7	0.5	0.3	0.4	0.5	0.1	0.2
600 & Over	0.4	1.1	0.7	1.1	0.7	0.3	0	0.2
Totals*	100%	100%	100%	100%	100%	100%	100%	100%

(note: \* less than 0.1%  
may not sum to 100% due to rounding)



Figure 1.  
PROJECTED HAZARD LEVELS FOR 1977-1980 FOR ALL STATES  
PROJECTION MAP CHART

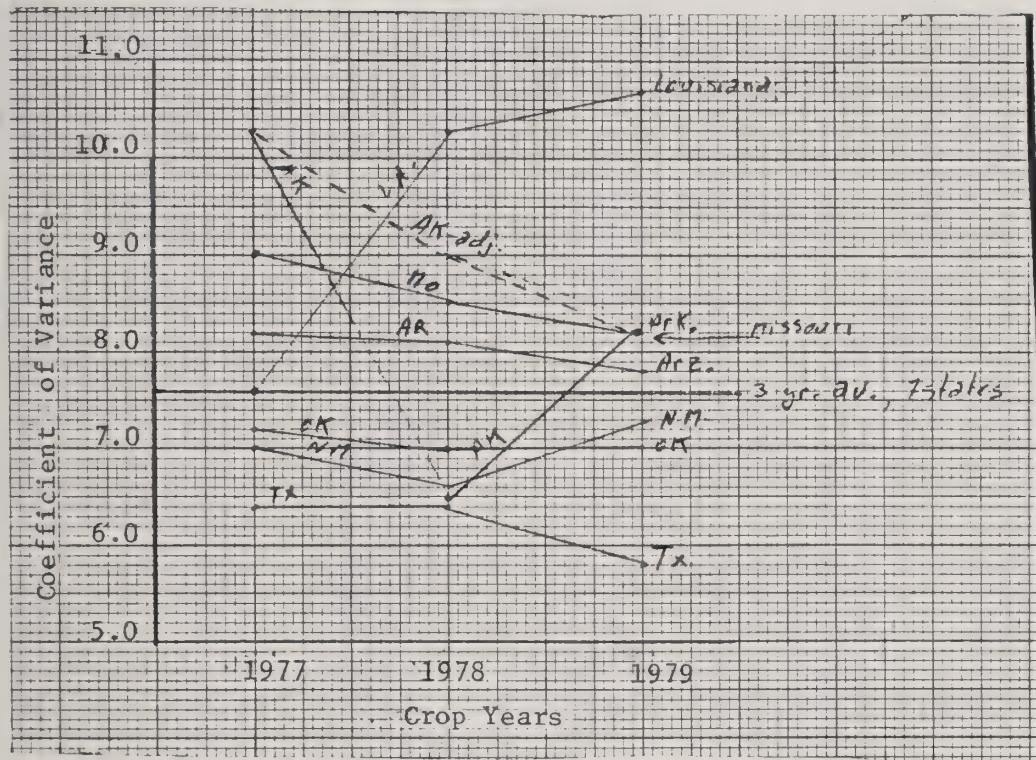




### Averages and Variations

The averages for the bale weights were quite close. However, except for Oklahoma and New Mexico, the samples tested out to be from different statistical populations, and tests showed that they did not all come from one national population.\* Figure 2 shows to what degree there were variations, based on examination of the coefficients of variance.

Figure 2. CV's for the 7 states over 3 years



A coefficient of variance (or CV) is really no more than the percentage of the mean value which the standard deviation represents. A positive situation is one with a low CV, i.e., where the standard deviation is low. It will be noted that the Arkansas CV for the 1978 period was adjusted upwards: this was based on intuition and an appreciation that the 1978 sample was quite small and may have come from no more than a couple of gins. Tables 4 and 5 provide the average bale weights and the CV's.

\* For more detail, please see Part II, and the Appendices.



Table 4. Average Bale Weights by State and Crop Year

State	Crop Years				Weighted Average
	1977	1978	1979	:	
	:	:	:	:	
Arkansas	496	451	487	488	
Arizona	505	506	486	504	
Louisiana	491	483	501	489	
Missouri	491	500	495	495	
New Mexico	504	507	497	502	
Oklahoma	494	506	500	501	
Texas	496	488	502	496	
Average All States	498	500	497	499	
	:				

Table 5. Coefficients of Variance

(S.D./Mean = C.V.)

States	Crop Years				3 Year Average
	1977	1978	1979	:	
	:	:	:	:	
Arkansas	10.3	6.5	8.2	9.0	
Arizona	8.2	8.1	7.8	8.2	
Louisiana	7.6	10.3	10.7	10.0	
Missouri	9.0	8.5	8.2	8.6	
New Mexico	7.0	6.6	7.3	7.1	
Oklahoma	7.2	7.0	7.0	7.1	
Texas	6.4	6.4	5.8	6.3	
Seven States	7.7	7.7	7.3	7.6	
	:				



Inspection of Figure 2 and Table 5 readily shows that Arkansas and Louisiana have both the highest fluctuating and the highest CV's. Texas exhibits the greatest degree of constancy. Missouri and Arizona have somewhat similar patterns, and Oklahoma and New Mexico have the closest relationship.

Although it is not known why Oklahoma and New Mexico have such statistical and visual similarities, and the data provides no basis for drawing any hypotheses as to the reasons, it is suspected that they have ginning equipment and field-to-gin transport similarities. The basis for that is that the weight of a bale of cotton is not directly related to farm size or to type of cotton, but rather to the type of press being used; and that the variance in bale weights is closely related to the rate at which cotton is fed into the gin, e.g., from modules or trailers. A determination of the reasons for the similarities is outside the scope of this paper. However, establishing the reasons would be a valid subject for another study.



PART II: details of the analysis



Observations

At first blush the data seemed to break out into three conceptual, i.e., "eyeballed," groups. The tests which follow were performed on the basis of this initial breakdown.

<u>group</u>	<u>states</u>	<u>means</u>
A	Arkansas	488 lbs.
	Louisiana	489 lbs.
B	Oklahoma	501 lbs.
	New Mexico	502 lbs.
	Arizona	504 lbs.
C	Missouri	495 lbs.
	Texas	496 lbs.

Although these differences appear to be minor, statistically there seem to be important differences between the variances and ranges of weights for different years and states (see Tables AII and AIII). This suggests that the distributions of bale weights for the 7 states may not all be the same.

Subsequent test procedures revealed that:

1. All samples do not appear to come from the same general population.
2. Only New Mexico and Oklahoma have statistically like means and variances. Assuming that the distribution of bale weights is normal for New Mexico and Oklahoma, the samples from these two states may be said to come from the same population.

However, what differences there were in the variances were not that great, and on a purely pragmatic basis may be considered to be quite similar (over time, not in any one year).



Details of Statistical Analysis

- i) Test of the null hypothesis that the population mean bale weight is the same for all seven states:

This test calls for an analysis of variance (ANOVA) procedure. Since this procedure assumes equal variances of bale weights for the seven states, Bartlett's test for equality of variances was first employed. Bartlett's test indicated that the variances for the seven states are not equivalent ( $X^2=434.25, df=6, p=.0001$ ). Consequently, a regular ANOVA procedure was not used. Each observation within a particular state was divided by the standard deviation for that state and an ANOVA was run on these modified observations. Although an exact F statistic no longer results with this modification, the statistic was assumed to have approximately an F distribution. The outcome of the test indicated that the means for the seven states are not equivalent to some overall mean ( $F=6320.63, df=6, p=.0001$ ).

- ii) Determination of differences in variances of bale weights for the seven states:

Bartlett's test in part (i) revealed that the variances for the seven states are not equivalent. Consequently, simultaneous tests were desired in order to discover which variances are not equivalent. However, the sample sizes are so large that it is virtually impossible not to reject the null hypothesis:  $\sigma_i^2 = \sigma_j^2$  (where  $\sigma_i^2$  and  $\sigma_j^2$  are population variances from 2 different states) except when the two sample standard deviations are equal. Oklahoma and New Mexico are the only two states having standard deviations close enough to be considered equal. Their ratio is approximately 1.0004.

Although the other pairs of variances may be considered statistically different, they do not appear to be too divergent in a purely practical sense.

- iii) Determination of differences in means of bale weights for the seven states

Having rejected the null hypothesis that the states' population mean bale weights are equivalent to an overall mean, interest turned to determining which means are statistically dissimilar. Simultaneous comparisons based on the three aforementioned "eyeballed" groups were formed.

Table 6, below, shows the five comparisons made and their degrees of freedom. Since the degrees of freedom involved are so large, these t-values may be compared to a tabled z-value (the standard normal distribution). In order to have an overall significance level less than or equal to 0.05 (i.e., we have at most a 5% probability of rejecting the null hypothesis given it is true), 1% significance levels must be used for each individual comparison. Since  $z.005 = 2.575$  and only the t-value for comparing Oklahoma and Arizona is greater than 2.575, the conclusion is that, of the five pairs of



states, only Oklahoma and Arizona have statistically different means. The same conclusion would result for an overall significance level of 0.01; 0.2% significance levels must be used for each individual comparison, and each t-value is compared to  $z_{0.001} = 3.08$ .

Table 6. Simultaneous comparisons of means for 5 pairs of states

<u>Comparison</u>	<u>/ t-value /</u>	<u>df</u>
Arizona & New Mexico <u>2/</u>	1.3592	3900.9
New Mexico & Oklahoma <u>1/</u>	1.4935	6623
Missouri & Texas <u>2/</u>	.7398	1351.7
Arkansas & Louisiana <u>2/</u>	.0963	1220.6
Arizona & Oklahoma <u>2/</u>	3.1507 <u>3/</u>	3931.2

- 1/ Computations were done under the assumption that the variances for the two states are equal (see page II-2, item ii).
- 2/ Computations were done under the assumption that the variances for the two states are not equal; an approximate t-statistic is given, as well as Satterthwaite's approximation for degrees of freedom (see page II-2 item ii).
- 3/ Significant at the 1% and at the 5% levels.

On the basis of the preceding statistical results, the three groups referred to should be modified. Only New Mexico and Oklahoma form a real group. Assuming the distribution of bale weights is normal for New Mexico and Oklahoma, the samples from these two states may be said to come from the same population. Inspection of the histograms for these states (see Appendix B) suggests that the distributions do appear to be normal.

The following table summarizes the ascertained relationships:

Table 7. Ascertained relationships, means & variances

<u>State</u>	<u>State with same mean</u>	<u>Also same variance</u>
Arizona	New Mexico	no
Arkansas	Louisiana	no
Missouri	Texas	no
Oklahoma	New Mexico	yes

Table A-IV in the Appendix provides the data on a per annum basis, for each state. Detailed tables, and histograms are to be found in Appendix B.



Part III: Appendices



## Appendix A



NOTE: in the print-outs the following abbreviations were employed

AR	Arizona
LA	Louisiana
MO	Missouri
NM	New Mexico
OK	Oklahoma
TX	Texas
CUM	cumulative
FREQ	frequency
N	number of items in a sample
STD	standard



Table A1

Statistics for entire sample of 7 states

sample size	14229
mean	498.602
standard deviation	37.8526
skewness	- .619771
CV	7.59175
maximum	724
minimum	300
upper quartile	520
median	501
lower quartile	480
mode	500

Extremes

Lowest	Highest
300	644
300	650
305	664
310	702
310	724



TABLE A-II

## STATISTICS BY YEAR

1977 to 1978

VARIABLE	N	MEAN	STANDARD DEVIATION	VARIANCE	MINIMUM VALUE	MAXIMUM VALUE	RANGE	STD ERROR OF MEAN	SKEWNESS
LBS	4907	4980.05726513	38.34341495	1470.21747014	300.00000000	664.00000000	364.00000000	0.54737223	-0.57675985
----- YEAR=1978-79 -----									
LBS	4520	500.43934053	39.77119916	1503.20588410	305.00000000	724.00000000	419.00000000	0.57668681	-0.72224662
----- YEAR=1979-80 -----									
LBS	4802	497.43044565	36.38817679	1324.09941030	300.00000000	702.00000000	402.00000000	0.52510871	-0.57051082



TABLE A-III

## STATISTICS BY STATE.

VARIABLE	N	MEAN	STANDARD DEVIATION	VARIANCE	STATE=AK		RANGE OF MEAN	STD. ERROR OF MEAN	SKEWNESS
					MINIMUM VALUE	MAXIMUM VALUE			
LBS	1049	4488.47283127	44.10545867	1945.29149444	315.00000000	664.00000000	349.00000000	1.36177262	-0.16314213
<u>STATE=AR</u>									
LBS	2287	503.77431220	41.08411482	1687.90490126	300.00000000	630.00000000	330.00000000	0.85909443	-0.71340318
<u>STATE=LA</u>									
LBS	630	4888.70156730	48.82452761	2383.83449668	305.00000000	630.00000000	325.00000000	1.94521574	-0.44862502
<u>STATE=MO</u>									
LBS	950	494.76979167	42.33377139	1792.14820017	325.00000000	724.00000000	399.00000000	1.36631666	-0.01723735
<u>STATE=NM</u>									
LBS	1701	502.12757202	35.40304492	1253.37842169	312.00000000	622.00000000	310.00000000	0.85839850	-0.39624861
<u>STATE=OK</u>									
LBS	4924	500.63666824	35.54474493	1263.42917617	300.00000000	600.00000000	300.00000000	0.50654313	-0.94187328
<u>STATE=TX</u>									
LBS	2674	495.87490665	31.24888399	976.49275074	310.00000000	650.00000000	340.00000000	0.60385022	-0.60996241



TABLE A-IV

## STATISTICS BY STATE AND YEAR

VARIABLE	N	MEAN	STATE=AK			YEAR=1977-78		
			STANDARD DEVIATION	VARIANCE	MINIMUM VALUE	MAXIMUM VALUE	RANGE	STD ERROR OF MEAN
LHS	122	493.45962733	51.1110511	2613.06067027	342.0000000	664.0000000	322.0000000	2.084870062
LHS	32	451.03125000	29.13315856	848.74092742	410.0000000	562.0000000	152.0000000	5.015006349
LHS	695	421.72105755	39.46644131	1597.31643066	315.0000000	625.0000000	310.0000000	1.51601353
LHS	1153	5114.03437797	41.015063485	1643.3747459	300.0000000	625.0000000	325.0000000	1.26812585
LHS	1053	505.94112061	40.8644090	1670.25868734	310.0000000	630.0000000	320.0000000	1.25944066
LHS	181	440.21546061	37.69463434	1436.00331492	390.0000000	591.0000000	201.0000000	2.81668599
LHS	126	401.71420571	37.37225862	1396.68571429	380.0000000	565.0000000	185.0000000	3.32938542
LHS	365	493.37431694	49.56268256	2456.45950296	305.0000000	630.0000000	325.0000000	-1.17151460
LHS	134	500.49275462	53.79692776	2444.10943616	360.0000000	620.0000000	260.0000000	2.59068292
LHS	351	441.48295114	44.05329857	1440.69311502	342.0000000	598.0000000	256.0000000	-0.43151425



TABLE A-IV (continued)

		STATE=NU		YEAR=1978-79	
LBS	114	5100.30434743	42.43071662	1140.36546263	325.00000000
				STATE=NU	YEAR=1979-80
LBS	421	4.45.49061033	40.61365932	1049.46932339	362.00000000
				STATE=JM	YEAR=1977-78
LBS	744	514.25537634	35.28971572	1245.36403566	344.00000000
				STATE=NH	YEAR=1978-79
LBS	430	516.54191018	33.27477439	1107.21061067	312.00000000
				STATE=NM	YEAR=1979-80
LBS	627	407.25837421	36.11271279	1304.12W2483	367.00000000
				STATE=UK	YEAR=1977-78
LBS	1451	444.34321158	35.36654449	1250.79246440	314.00000000
				STATE=OK	YEAR=1978-79
LBS	1713	502.9H646362	35.56932692	1265.17701757	328.00000000
				STATE=OK	YEAR=1979-80
LBS	1700	500.42705A82	34.78702429	1210.14123325	300.00000000
				STATE=TX	YEAR=1977-78
LBS	461	445.05156794	31.93313272	1019.72496556	360.00000000
				STATE=TX	YEAR=1978-79
LBS	712	437.912A1330	31.41630374	986.98414060	310.00000000
				STATE=TX	YEAR=1979-80
LBS	1035	502.048405197	29.11704664	847.80240518	340.00000000
				STATE=TX	YEAR=1979-80
LBS	593	500.00000000	253.00000000	0.90505953	-1.07239043



## APPENDIX B



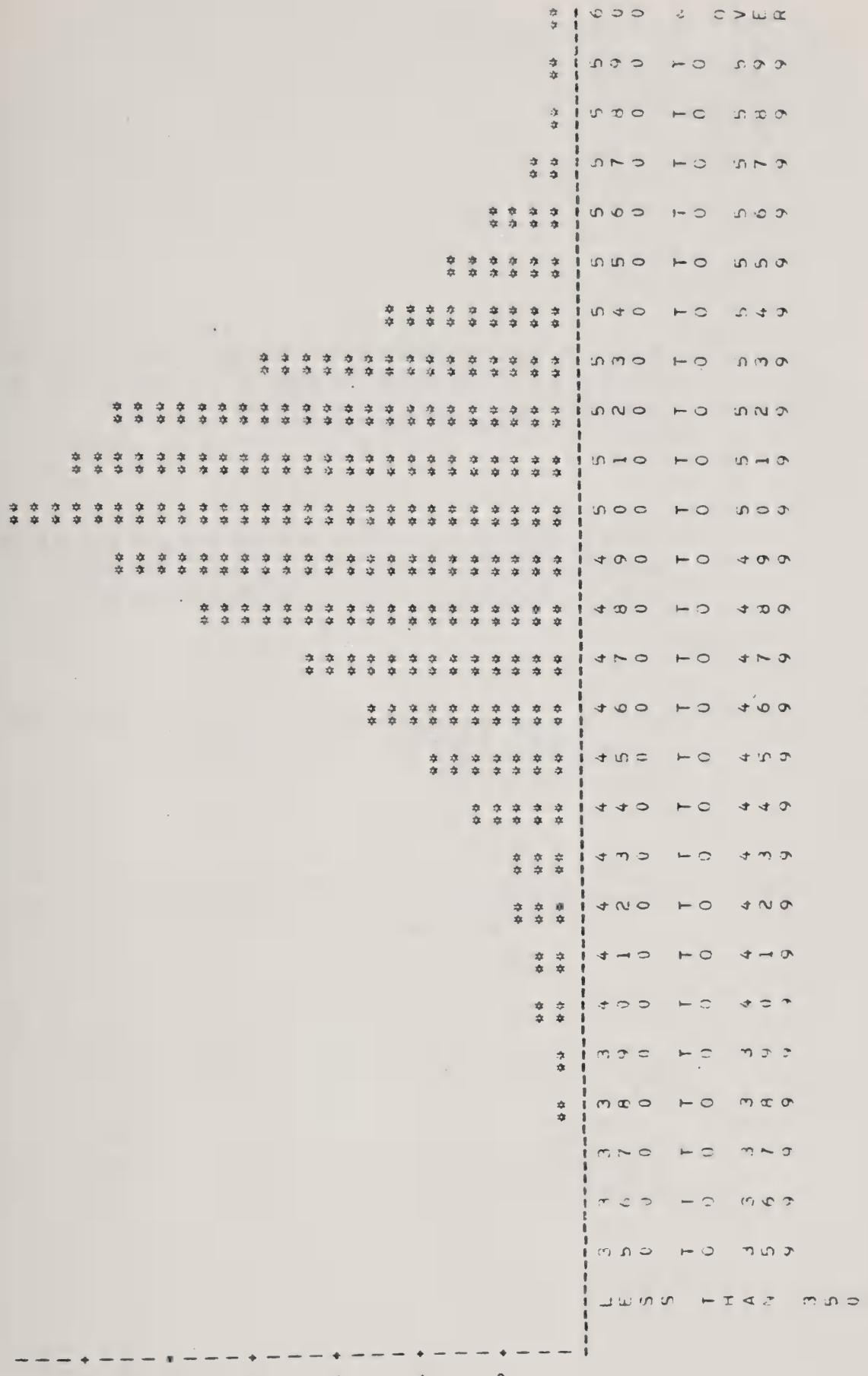
SECTION B-1: cotton bale weights for all seven states, histograms  
and frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



## COTTON HALF WEIGHTS FOR 1977-1980 FOR ALL STATES

## PERCENTAGE BAR CHART

PERCENTAGE





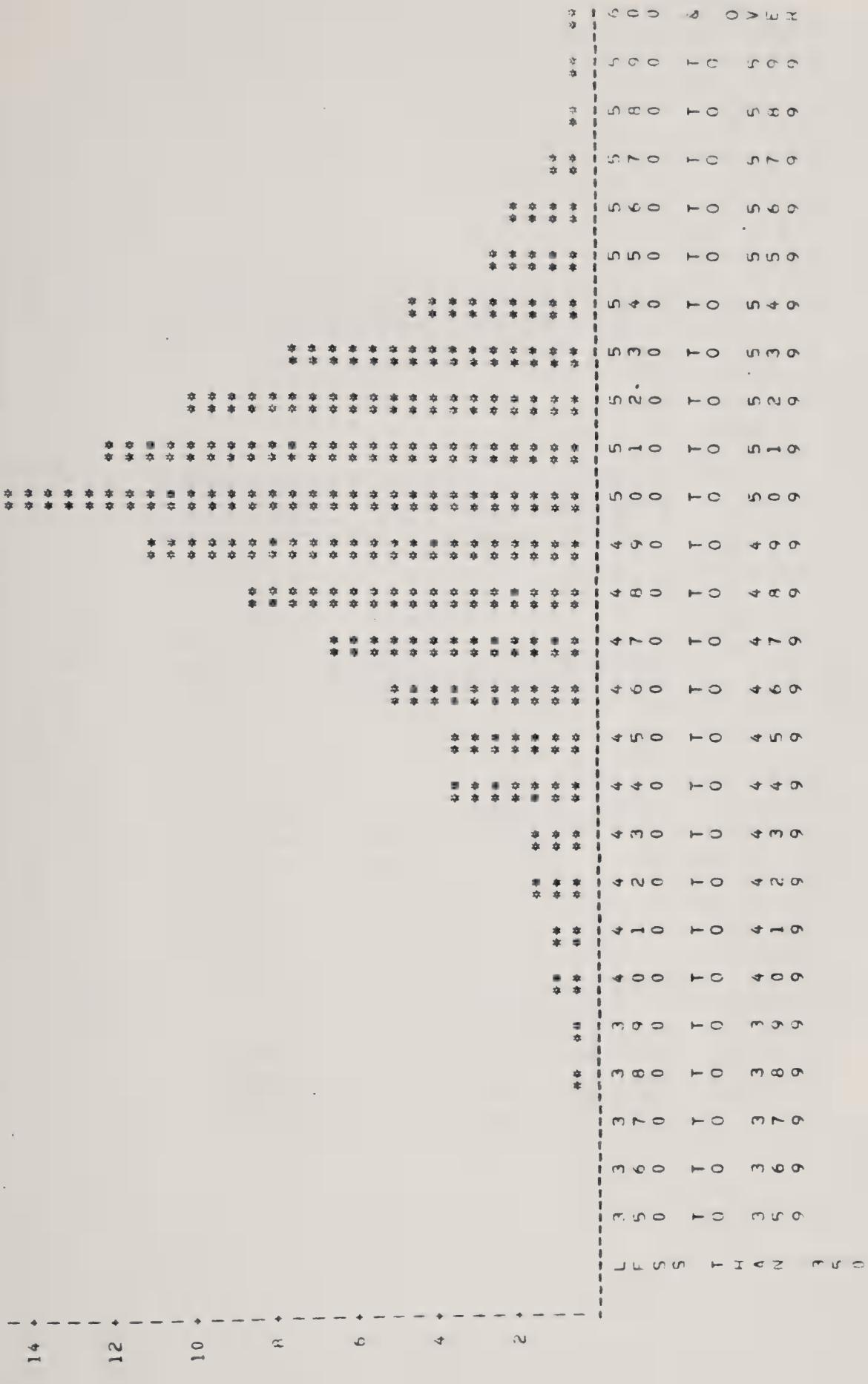
## FREQUENCY OF LBS FOR 1977-80 FOR ALL 7 STATES

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	31	31	0.218	0.218
350 TO 359	16	47	0.112	0.330
360 TO 369	28	75	0.197	0.527
370 TO 379	24	99	0.169	0.696
380 TO 389	48	147	0.337	1.033
390 TO 399	51	198	0.358	1.392
400 TO 409	114	312	0.801	2.193
410 TO 419	152	464	1.068	3.261
420 TO 429	235	699	1.652	4.913
430 TO 439	210	909	1.476	6.388
440 TO 449	375	1284	2.635	9.024
450 TO 459	497	1781	3.493	12.517
460 TO 469	724	2505	5.088	17.605
470 TO 479	940	3445	6.606	24.211
480 TO 489	1301	4746	9.143	33.354
490 TO 499	1577	6323	11.083	44.437
500 TO 509	1900	8223	13.353	57.790
510 TO 519	1739	9962	12.222	70.012
520 TO 529	1544	11506	10.851	80.863
530 TO 539	1102	12608	7.745	88.608
540 TO 549	649	13257	4.561	93.169
550 TO 559	392	13649	2.755	95.924
560 TO 569	251	13900	1.764	97.685
570 TO 579	150	14050	1.054	98.742
580 TO 589	81	14131	0.569	99.311
590 TO 599	44	14175	0.309	99.620
600 & OVER	54	14229	0.380	100.000



PERCENTAGE BAR CHART

PERCENTAGE



LBS



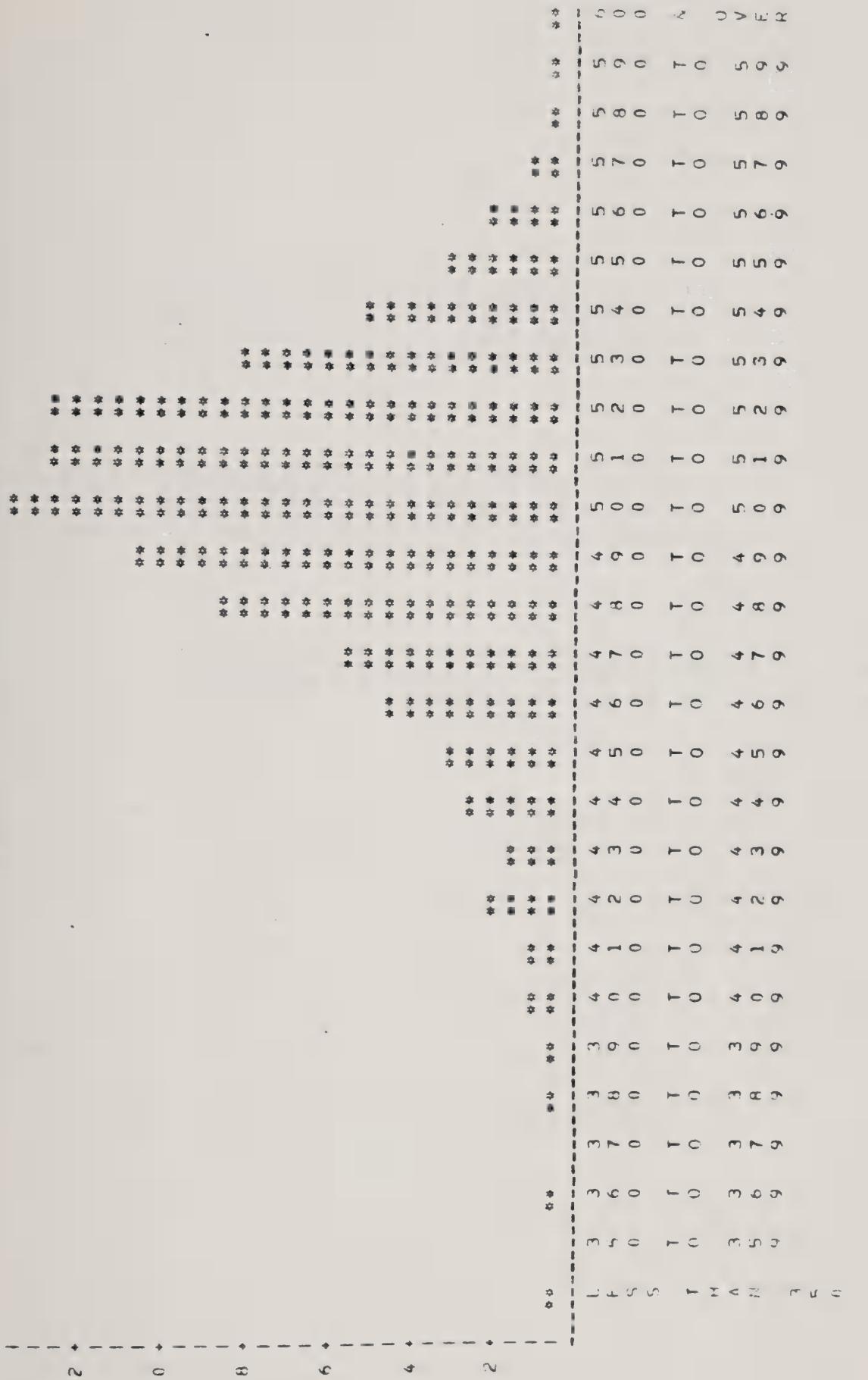
FREQUENCY OF LHS BY YEAR  
YEAR=1977-78

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	10	10	0.204	0.204
350 To 359	6	16	0.122	0.326
360 To 369	9	25	0.183	0.509
370 To 379	11	36	0.224	0.734
380 To 389	19	55	0.387	1.121
390 To 399	16	71	0.326	1.447
400 To 409	42	113	0.856	2.303
410 To 419	54	167	1.100	3.403
420 To 429	85	252	1.732	5.136
430 To 439	80	332	1.630	6.766
440 To 449	160	492	3.261	10.026
450 To 459	164	656	3.342	13.369
460 To 469	247	903	5.034	18.402
470 To 479	329	1232	6.705	25.107
480 To 489	422	1654	8.600	33.707
490 To 499	545	2199	11.107	44.814
500 To 509	703	2907	14.428	59.242
510 To 519	600	3507	12.227	71.469
520 To 529	436	3993	9.904	81.374
530 To 539	358	4351	7.296	88.669
540 To 549	210	4561	4.280	92.949
550 To 559	132	4693	2.690	95.639
560 To 569	93	4786	1.895	97.534
570 To 579	53	4839	1.080	98.614
580 To 589	33	4872	0.673	99.287
590 To 599	18	4890	0.367	99.654
600 & OVER	17	4907	0.346	100.000



PERCENTAGE HAR CHART

PFRCCNTAIF



LAS



FREQUENCY OF LBS BY YEAR  
YEAR=1978-79

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	12	12	0.265	0.265
350 TO 359	6	20	0.177	0.442
360 TO 369	12	32	0.265	0.708
370 TO 379	6	38	0.133	0.841
380 TO 389	13	51	0.288	1.128
390 TO 399	14	65	0.310	1.438
400 TO 409	37	102	0.819	2.257
410 TO 419	51	153	1.128	3.385
420 TO 429	80	233	1.770	5.155
430 TO 439	59	292	1.305	6.460
440 TO 449	104	396	2.301	8.761
450 TO 459	138	534	3.053	11.814
460 TO 469	213	747	4.712	16.527
470 TO 479	250	997	5.531	22.058
480 TO 489	377	1374	8.341	30.398
490 TO 499	465	1839	10.288	40.686
500 TO 509	605	2444	13.385	54.071
510 TO 519	567	3011	12.544	66.615
520 TO 529	563	3574	12.456	79.071
530 TO 539	368	3942	8.142	87.212
540 TO 549	224	4171	5.066	92.279
550 TO 559	137	4308	3.031	95.310
560 TO 569	90	4398	1.991	97.301
570 TO 579	54	4452	1.195	98.496
580 TO 589	31	4483	0.686	99.181
590 TO 599	14	4497	0.310	99.491
600 & OVER	23	4520	0.509	100.000

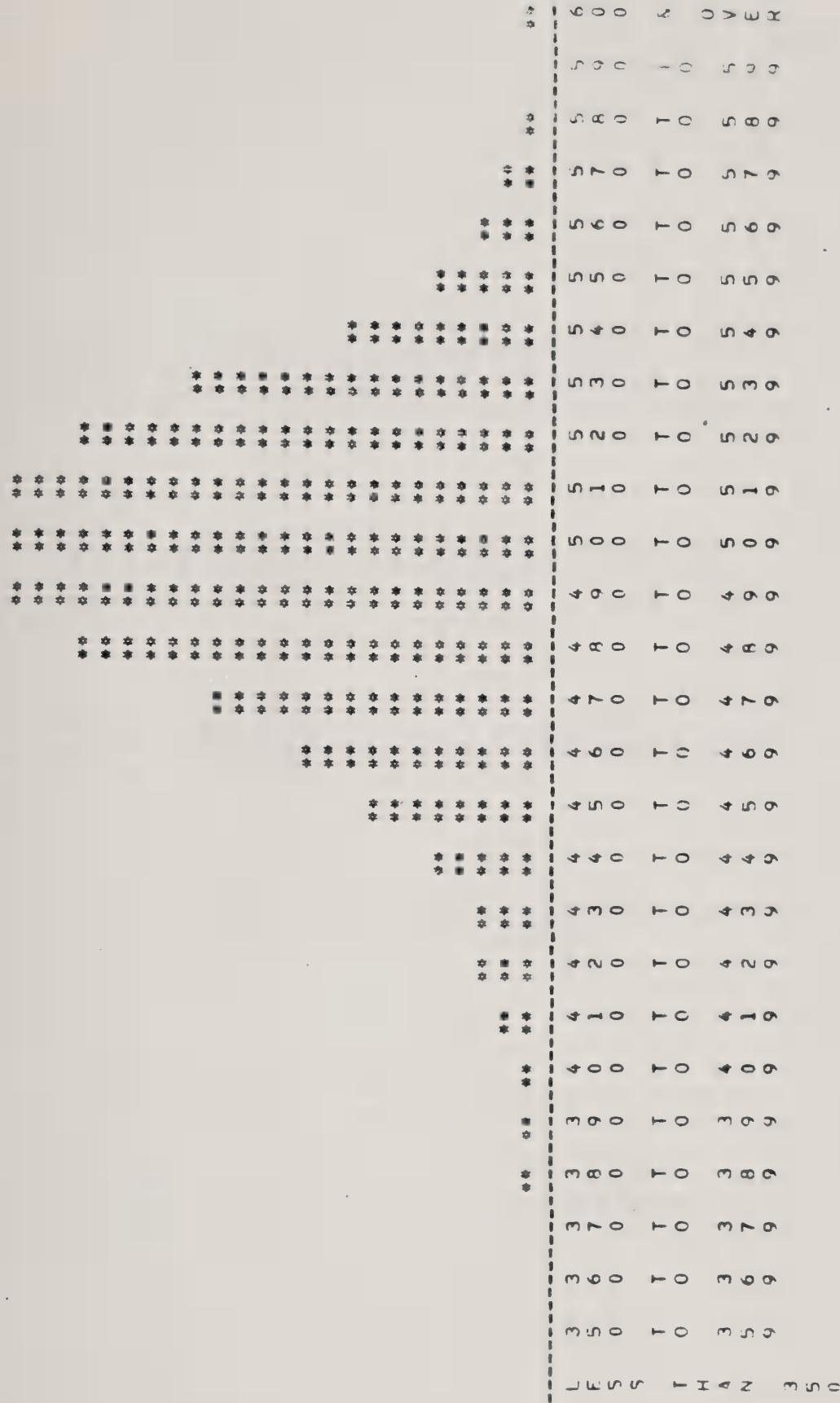


PERCENTAGE BAR CHART

PERCENTAGE

12  
10  
8  
6  
4  
2

III-13



LRS



FREQUENCY OF LBS BY YEAR  
YEAR=1979-80

III-14

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	9	9	0.187	0.187
350 TO 359	2	11	0.042	0.229
360 TO 369	7	18	0.146	0.375
370 TO 379	7	25	0.146	0.521
380 TO 389	16	41	0.333	0.854
390 TO 399	21	62	0.437	1.291
400 TO 409	35	97	0.729	2.020
410 TO 419	47	144	0.979	2.999
420 TO 429	70	214	1.458	4.456
430 TO 439	71	285	1.479	5.935
440 TO 449	111	396	2.312	8.247
450 TO 459	195	591	4.061	12.307
460 TO 469	264	855	5.498	17.805
470 TO 479	301	1216	7.518	25.323
480 TO 489	502	1718	10.454	35.777
490 TO 499	507	2285	11.806	47.584
500 TO 509	587	2872	12.224	59.808
510 TO 519	572	3444	11.912	71.720
520 TO 529	495	3939	10.308	82.028
530 TO 539	376	4315	7.830	89.858
540 TO 549	210	4525	4.373	94.232
550 TO 559	123	4648	2.561	96.793
560 TO 569	68	4716	1.416	98.209
570 TO 579	43	4759	0.895	99.105
580 TO 589	17	4776	0.354	99.459
590 TO 599	12	4788	0.250	99.708
600 & OVER	14	4802	0.292	100.000

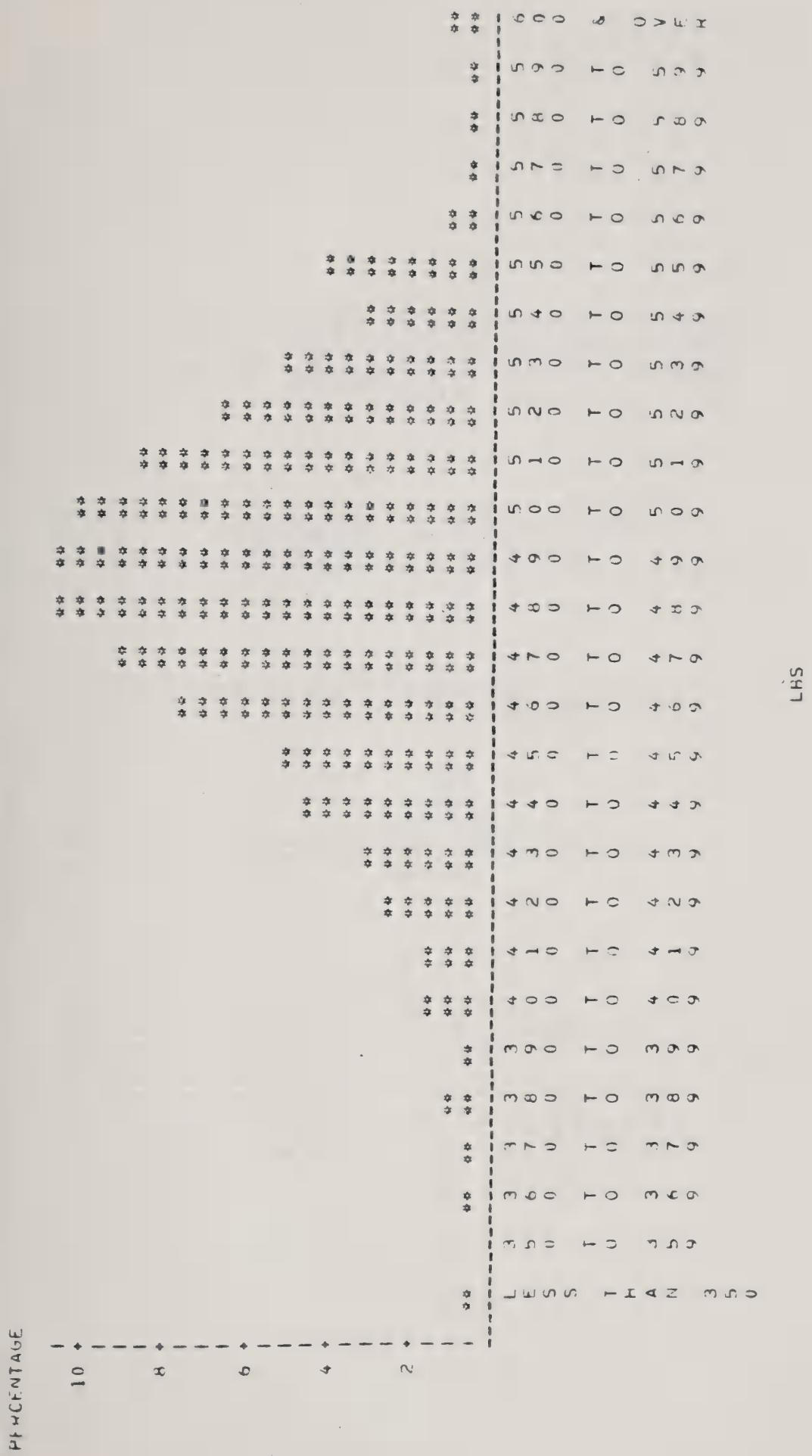


SECTION B-2: cotton bale weights for Arkansas, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



### PÉRCÉNTRAGE HAK CHART

COTTON HALE WEIGHTS FOR 1977-1980 BY STATE  
STATES





FREQUENCY OF LBS BY STATE  
STATE=AK

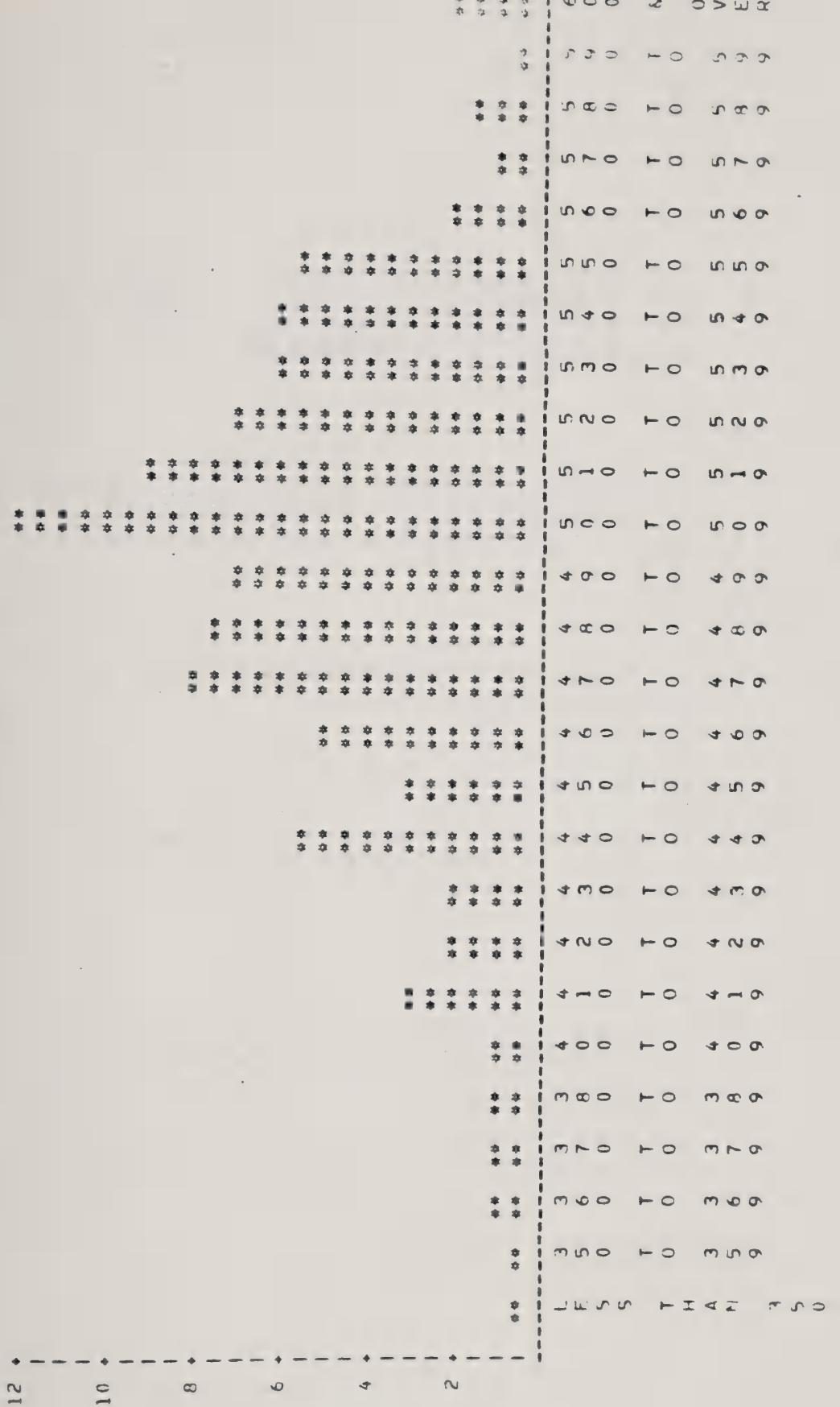
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	4	4	0.381	0.381
360 TO 369	2	6	0.191	0.572
370 TO 379	4	10	0.381	0.953
380 TO 389	5	15	0.477	1.430
390 TO 399	8	23	0.763	2.193
400 TO 409	7	30	0.667	2.860
410 TO 419	18	48	1.716	4.576
420 TO 429	18	66	1.716	6.292
430 TO 439	24	90	2.288	8.580
440 TO 449	31	121	2.955	11.535
450 TO 459	49	170	4.671	16.206
460 TO 469	55	225	5.243	21.449
470 TO 479	77	302	7.340	28.789
480 TO 489	96	398	9.152	37.941
490 TO 499	110	508	10.486	48.427
500 TO 509	112	620	10.677	59.104
510 TO 519	107	727	10.200	69.304
520 TO 529	89	816	8.484	77.788
530 TO 539	69	885	6.578	84.366
540 TO 549	92	937	4.957	89.323
550 TO 559	29	966	2.765	92.068
560 TO 569	42	1008	4.004	96.092
570 TO 579	12	1020	1.144	97.235
580 TO 589	5	1025	0.477	97.712
590 TO 599	6	1031	0.572	98.284
600 & OVER	7	1038	0.667	98.951
	11	1049	1.049	100.000



## PERCENTAGE BAR CHART

COTTON RALE WEIGHTS BY STATE & YEAR  
STATE=AK YEAR=1977-78

PERCENTAGE



LBS



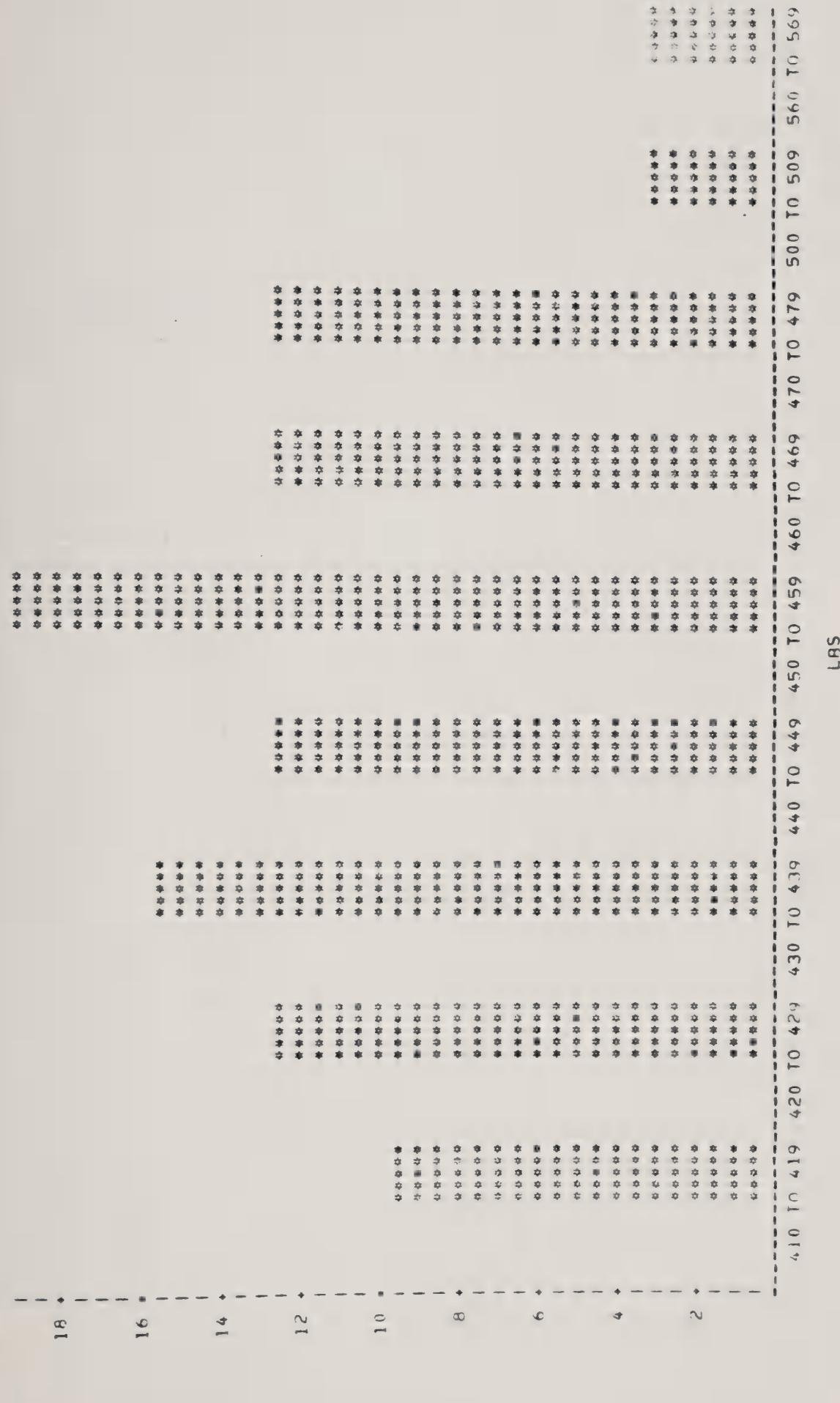
FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	2	2	0.621	0.621
360 TO 369	2	4	0.621	1.242
370 TO 379	3	7	0.932	2.174
380 TO 389	3	10	0.932	3.106
390 TO 409	3	13	0.932	4.037
410 TO 419	9	16	0.932	4.969
420 TO 429	7	25	2.795	7.764
430 TO 439	7	32	2.174	9.938
440 TO 449	17	39	2.174	12.112
450 TO 459	10	56	5.280	17.391
460 TO 469	16	66	3.106	20.497
470 TO 479	25	82	4.969	25.466
480 TO 489	24	107	7.764	33.230
490 TO 499	22	131	7.453	40.683
500 TO 509	39	153	6.832	47.516
510 TO 519	29	192	12.112	59.627
520 TO 529	22	221	9.006	68.634
530 TO 539	19	243	6.832	75.466
540 TO 549	20	262	5.901	81.366
550 TO 559	17	282	6.211	87.578
560 TO 569	6	299	5.280	92.857
570 TO 579	4	305	1.863	94.720
580 TO 589	5	309	1.242	95.963
590 TO 599	1	314	1.553	97.516
600 & OVER	7	315	0.311	97.826
	322	322	2.174	100.000



### PERCENTAGE BAR CHART

**COTTON BALE WEIGHTS BY STATE & YEAR  
STATE-~~AK~~ YFARE=1974-79**





FREQUENCY OF LHS BY YEAR  
STATE=AK YEAR=1978-79

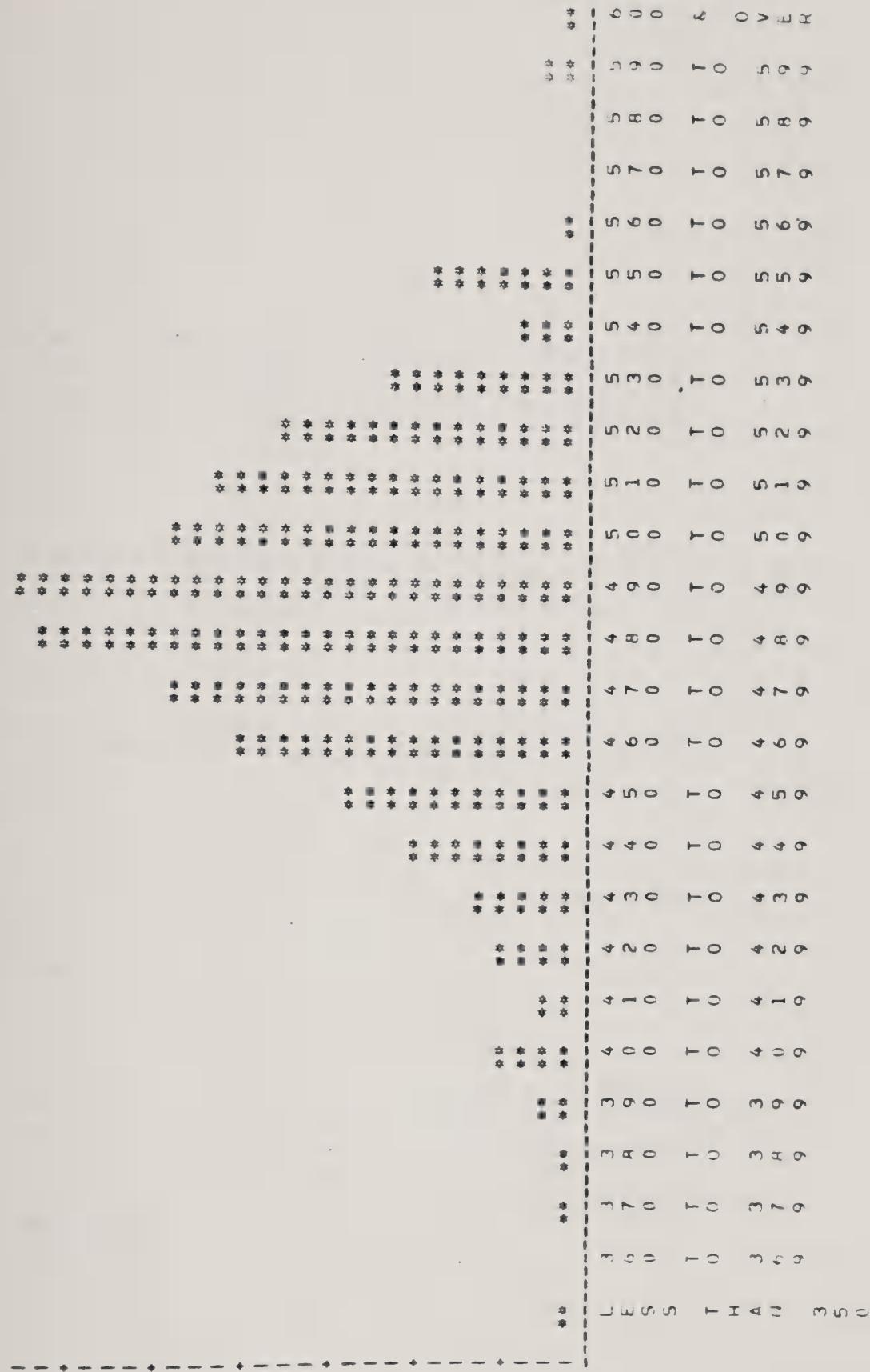
LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
410 TO 419	3	3	9•375	9•375
420 TO 429	4	7	12•500	21•875
430 TO 439	5	12	15•625	37•500
440 TO 449	4	16	12•500	50•000
450 TO 459	6	22	18•750	68•750
460 TO 469	4	26	12•500	81•250
470 TO 479	4	30	12•500	93•750
500 TO 509	1	31	3•125	96•875
560 TO 569	1	32	3•125	100•000



COTTON MALE WEIGHTS BY STATE & YEAR  
STATE=AK YEAR=1979-80

PERCENTAGE BAR CHART

PERCENTAGE



LRS



FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1979-80

III-22

LHS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	2	2	0.288	0.288	0.288
370 TO 379	1	3	0.144	0.432	0.432
380 TO 389	2	5	0.268	0.719	0.719
390 TO 399	5	10	0.719	1.439	1.439
400 TO 409	7	17	1.007	2.446	2.446
410 TO 419	15	32	2.158	4.604	4.604
420 TO 429	6	38	0.863	5.468	5.468
430 TO 439	13	51	1.071	7.338	7.338
440 TO 449	19	70	2.734	10.072	10.072
450 TO 459	23	93	4.029	14.101	14.101
460 TO 469	39	137	5.612	19.712	19.712
470 TO 479	57	194	8.201	27.914	27.914
480 TO 489	67	261	9.640	37.554	37.554
490 TO 499	86	347	12.374	49.928	49.928
500 TO 509	90	437	12.950	62.878	62.878
510 TO 519	67	504	9.640	72.518	72.518
520 TO 529	60	564	8.633	81.151	81.151
530 TO 539	47	611	6.763	87.914	87.914
540 TO 549	33	644	4.748	92.662	92.662
550 TO 559	9	653	1.295	93.957	93.957
560 TO 569	25	678	3.597	97.554	97.554
570 TO 579	5	683	0.719	98.273	98.273
580 TO 589	1	684	0.144	98.417	98.417
590 TO 599	1	685	0.144	98.561	98.561
600 & OVER	6	691	0.863	99.424	99.424
	4	695	0.576	100.000	100.000



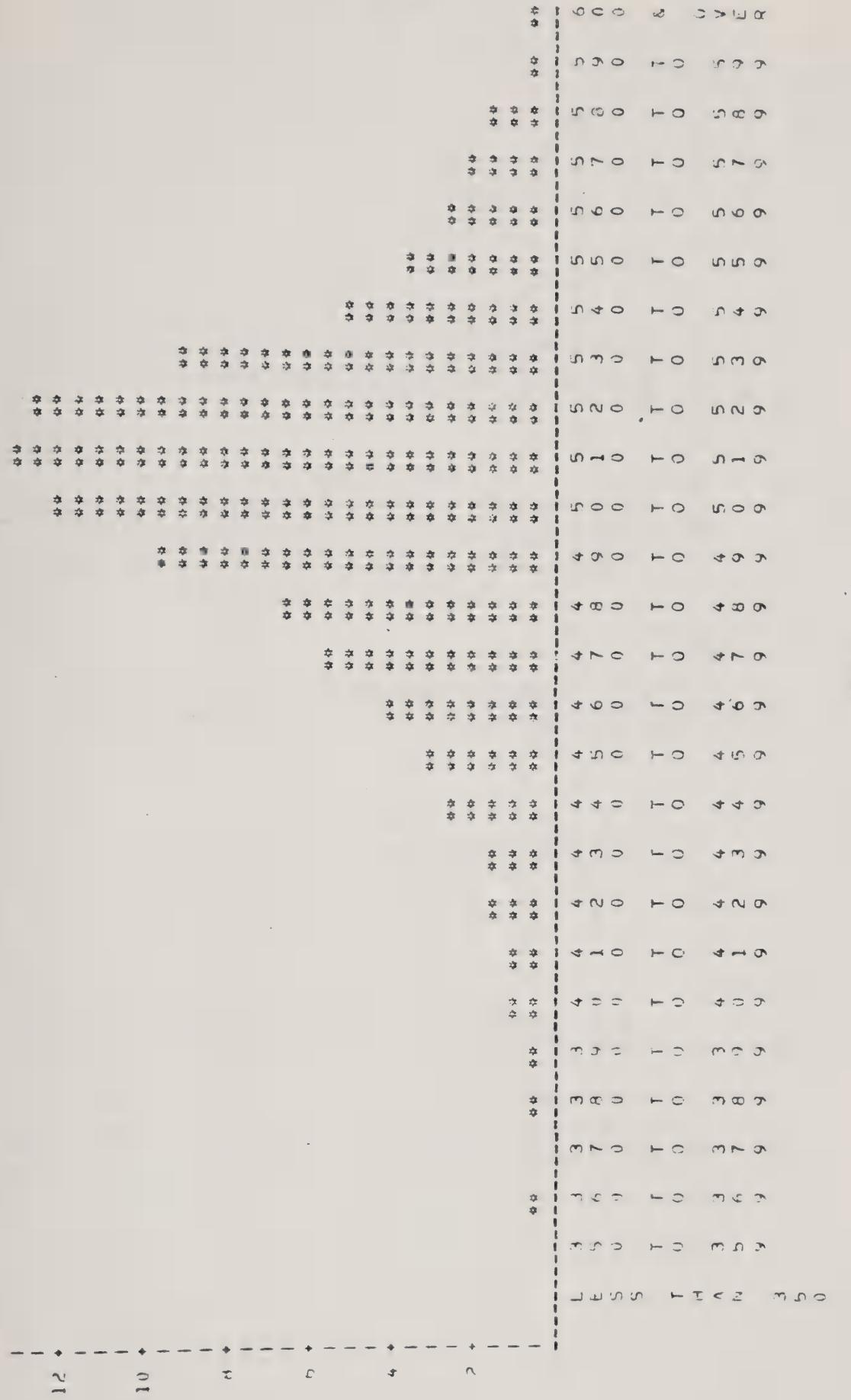
SECTION B-3: cotton bale weights for Arizona, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



CORTON HALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=AR

## PERCENTAGE BAR CHART

PFRICER,TATI



LBS



FREQUENCY OF LHS HY STATE  
STATE=AR

III-24

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	5	5	0.219	0.219
350 TO 359	4	9	0.175	0.394
360 TO 369	7	16	0.306	0.700
370 TO 379	4	20	0.175	0.875
380 TO 389	8	28	0.350	1.224
390 TO 399	16	44	0.790	1.924
400 TO 409	21	65	0.918	2.842
410 TO 419	19	84	0.831	3.673
420 TO 429	36	120	1.574	5.247
430 TO 439	39	159	1.705	6.952
440 TO 449	55	214	2.405	9.357
450 TO 459	73	287	3.192	12.549
460 TO 469	93	375	3.848	16.397
470 TO 479	123	498	5.378	21.775
480 TO 489	153	651	6.690	28.465
490 TO 499	216	867	9.445	37.910
500 TO 509	216	1143	12.068	49.978
510 TO 519	293	1436	12.812	62.790
520 TO 529	282	1718	12.331	75.120
530 TO 539	209	1927	9.139	84.259
540 TO 549	120	2047	5.247	89.506
550 TO 559	83	2130	3.629	93.135
560 TO 569	56	2186	2.449	95.584
570 TO 579	45	2231	1.968	97.551
580 TO 589	29	2260	1.268	98.819
590 TO 599	11	2271	0.481	99.300
600 & OVER	16	2287	0.700	100.000



PERCENTAGE BAR CHART

PERCENTAGE

14

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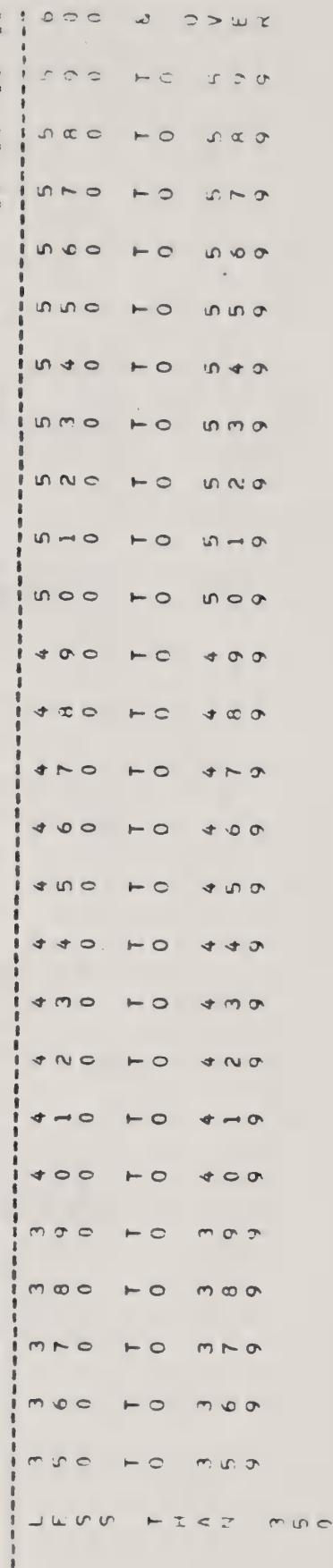
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III-25

LBS





FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1977-78

III-26

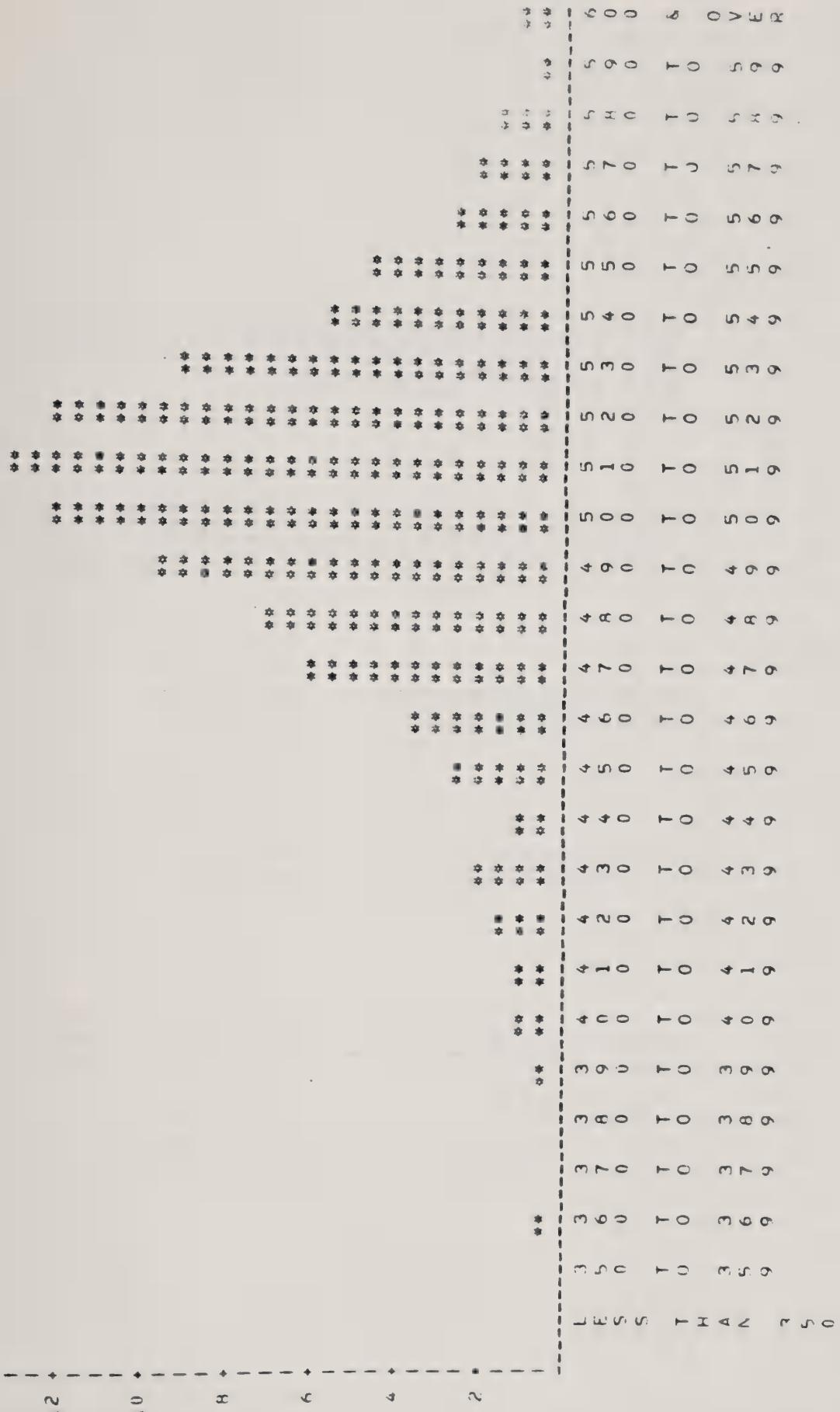
LBS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
350 TO 359	4	4	0.380	0.380	0.380
360 TO 369	2	6	0.190	0.570	0.570
370 TO 379	1	7	0.095	0.665	0.665
380 TO 389	3	10	0.285	0.950	0.950
390 TO 399	6	16	0.570	1.519	1.519
400 TO 409	8	24	0.760	2.279	2.279
410 TO 419	9	33	0.855	3.134	3.134
420 TO 429	8	41	0.760	3.894	3.894
430 TO 439	11	52	1.045	4.938	4.938
440 TO 449	13	65	1.235	6.173	6.173
450 TO 459	29	98	3.134	9.307	9.307
460 TO 469	39	127	2.754	12.061	12.061
470 TO 479	50	166	3.704	15.764	15.764
480 TO 489	33	216	4.743	20.513	20.513
490 TO 499	68	284	6.458	26.971	26.971
500 TO 509	87	371	8.262	35.233	35.233
510 TO 519	126	497	11.966	47.198	47.198
520 TO 529	142	639	13.485	60.684	60.684
530 TO 539	147	786	13.960	74.644	74.644
540 TO 549	101	887	9.592	84.230	84.230
550 TO 559	56	943	5.318	89.554	89.554
560 TO 569	36	979	3.419	92.972	92.972
570 TO 579	30	1009	2.849	95.821	95.821
580 TO 589	24	1029	1.899	97.721	97.721
590 TO 599	12	1041	1.140	99.860	99.860
600 & OVER	6	1047	0.570	99.430	99.430
	1653	1653	0.570	100.000	100.000



COTTON HALF WEIGHTS BY STATE & YEAR  
STATE=AR YEAR=197H-79

### PERCENTAGE BAR CHART

PERCENTAGE



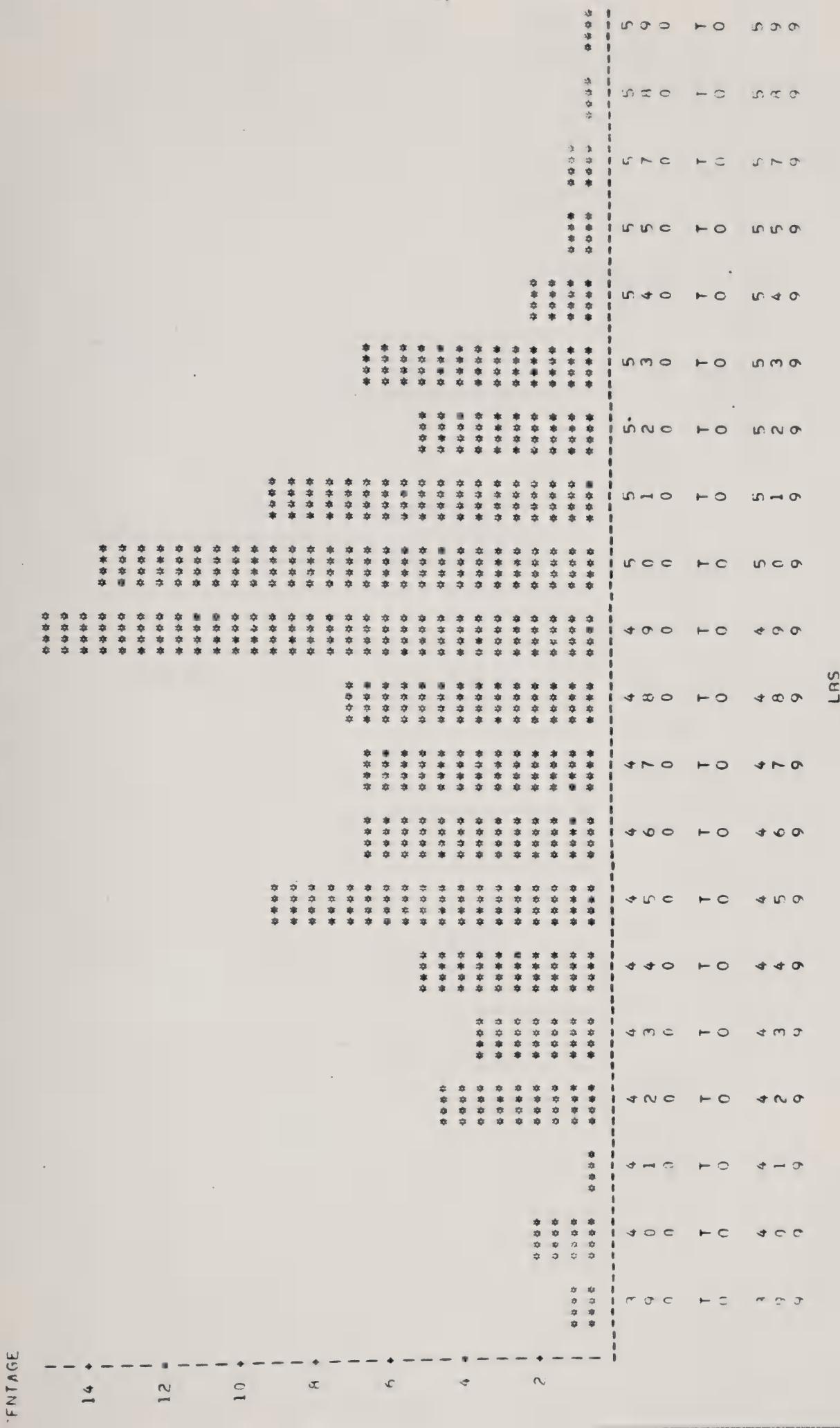


FREQUENCY OF LRS BY YEAR  
STATE=AK YEAR=1978-79

LRS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
350 TO 359	1	1	1	0.095	0.095
360 TO 369	2	3	3	0.190	0.285
370 TO 379	6	9	9	0.570	0.855
380 TO 389	1	10	10	0.095	0.950
390 TO 399	2	12	12	0.190	1.140
400 TO 409	6	18	18	0.570	1.709
410 TO 419	8	26	26	0.760	2.469
420 TO 429	10	36	36	0.950	3.419
430 TO 439	17	53	53	1.614	5.033
440 TO 449	20	73	73	1.899	6.933
450 TO 459	13	86	86	1.235	8.167
460 TO 469	28	114	114	2.659	10.826
470 TO 479	37	151	151	3.514	14.340
480 TO 489	61	212	212	5.793	20.133
490 TO 499	72	284	284	6.838	26.971
500 TO 509	102	386	386	9.687	36.657
510 TO 519	126	512	512	11.966	48.623
520 TO 529	135	647	647	12.821	61.443
530 TO 539	126	773	773	11.966	73.409
540 TO 549	96	869	869	9.117	82.526
550 TO 559	60	929	929	5.698	88.224
560 TO 569	45	974	974	4.274	92.498
570 TO 579	26	1000	1000	2.469	94.967
580 TO 589	23	1023	1023	2.184	97.151
590 TO 599	16	1039	1039	1.519	98.670
600 & OVER	4	1043	1043	0.360	99.050
	10	1053	1053	0.950	100.000



### PERCENTAGE BAR CHART





FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
390 TO 399	2	2	1.105	1.105
400 TO 409	4	6	2.210	3.315
410 TO 419	1	7	0.552	3.867
420 TO 429	8	15	4.420	8.287
430 TO 439	6	21	3.315	11.602
440 TO 449	9	30	4.972	16.575
450 TO 459	16	46	8.840	25.414
460 TO 469	12	58	6.630	32.044
470 TO 479	12	70	6.630	38.674
480 TO 489	13	83	7.182	45.856
490 TO 499	27	110	14.917	60.773
500 TO 509	24	134	13.260	74.033
510 TO 519	16	150	8.640	82.873
520 TO 529	9	159	4.972	87.845
530 TO 539	12	171	6.630	94.475
540 TO 549	4	175	2.210	96.685
550 TO 559	2	177	1.105	97.790
560 TO 569	2	179	1.105	98.895
570 TO 579	1	180	0.552	99.448
580 TO 589	1	181	0.552	100.000



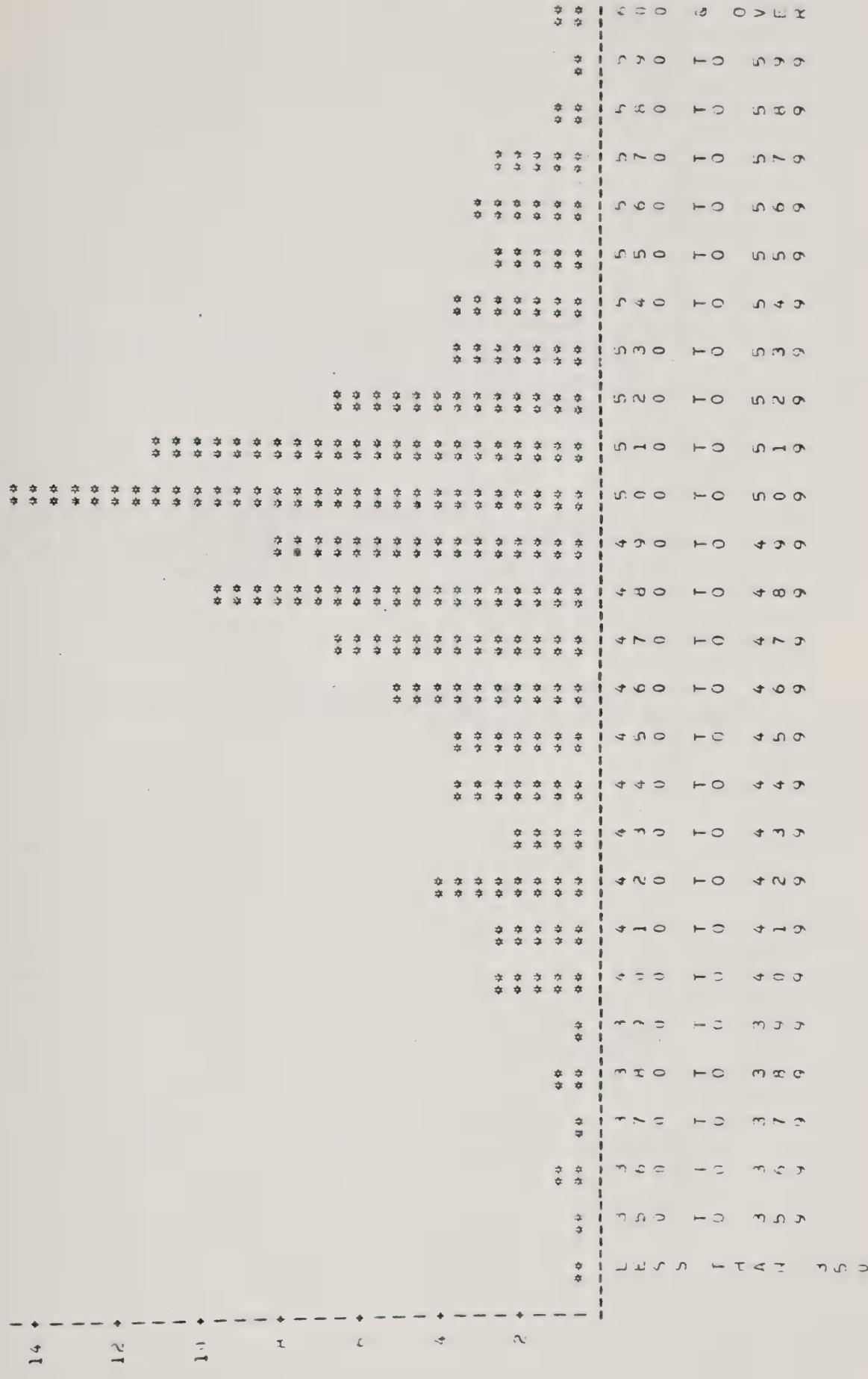
SECTION B-4: cotton bale weights for Louisiana, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



COTTON HALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=LA

PERCENTAGE BAR CHART

PERCENTAGE



LHS



FREQUENCY OF LHS BY STATE  
STATE=LA

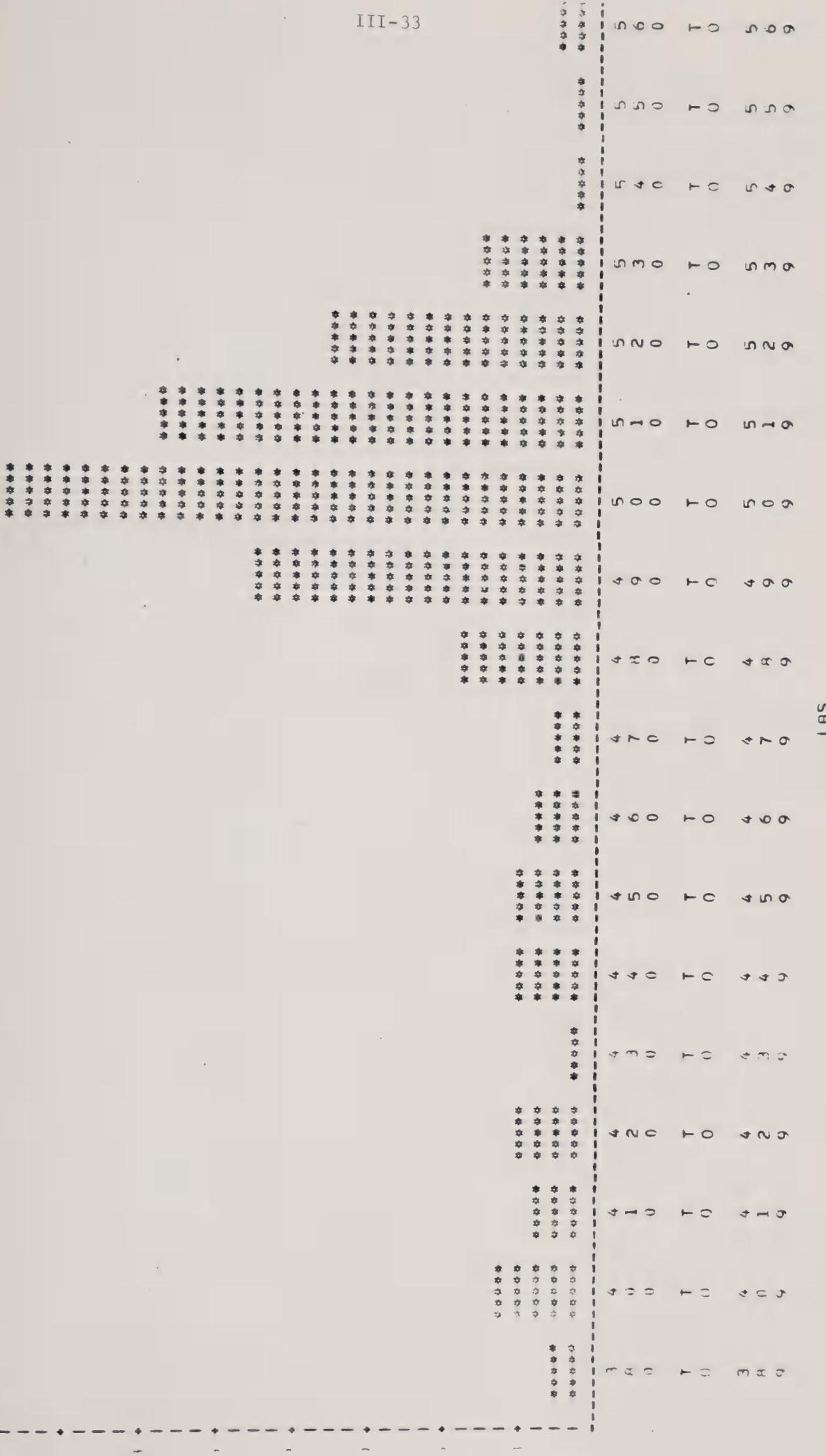
LHS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
350 TO 359	4	4	4	0.635	0.635
360 TO 369	3	7	7	0.476	1.111
370 TO 379	5	12	12	0.794	1.905
380 TO 389	3	15	15	0.476	2.381
390 TO 399	5	20	20	0.794	3.175
400 TO 409	2	22	22	0.317	3.492
410 TO 419	16	38	20	0.540	6.032
420 TO 429	17	55	25	0.698	8.730
430 TO 439	25	80	50	0.968	12.698
440 TO 449	13	93	63	2.053	14.762
450 TO 459	21	114	84	3.333	18.095
460 TO 469	23	137	107	3.651	21.746
470 TO 479	31	168	138	4.921	26.667
480 TO 489	42	210	190	6.667	33.333
490 TO 499	60	270	230	9.524	42.857
500 TO 509	51	321	281	8.095	50.952
510 TO 519	90	411	391	14.286	65.238
520 TO 529	70	481	321	11.111	76.349
530 TO 539	40	521	241	6.349	82.698
540 TO 549	23	544	194	3.651	86.349
550 TO 559	21	565	145	3.333	89.683
560 TO 569	15	580	90	2.381	92.063
570 TO 579	19	599	79	3.016	95.079
580 TO 589	16	615	63	2.540	97.619
590 TO 599	6	621	57	0.952	98.571
600 & OVER	2	623	59	0.317	.98.889
	7	630	66	1.111	100.000



COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=LA YEAR=1977-78

## PERCENTAGE BAR CHART

PERCENTAGE



LAS



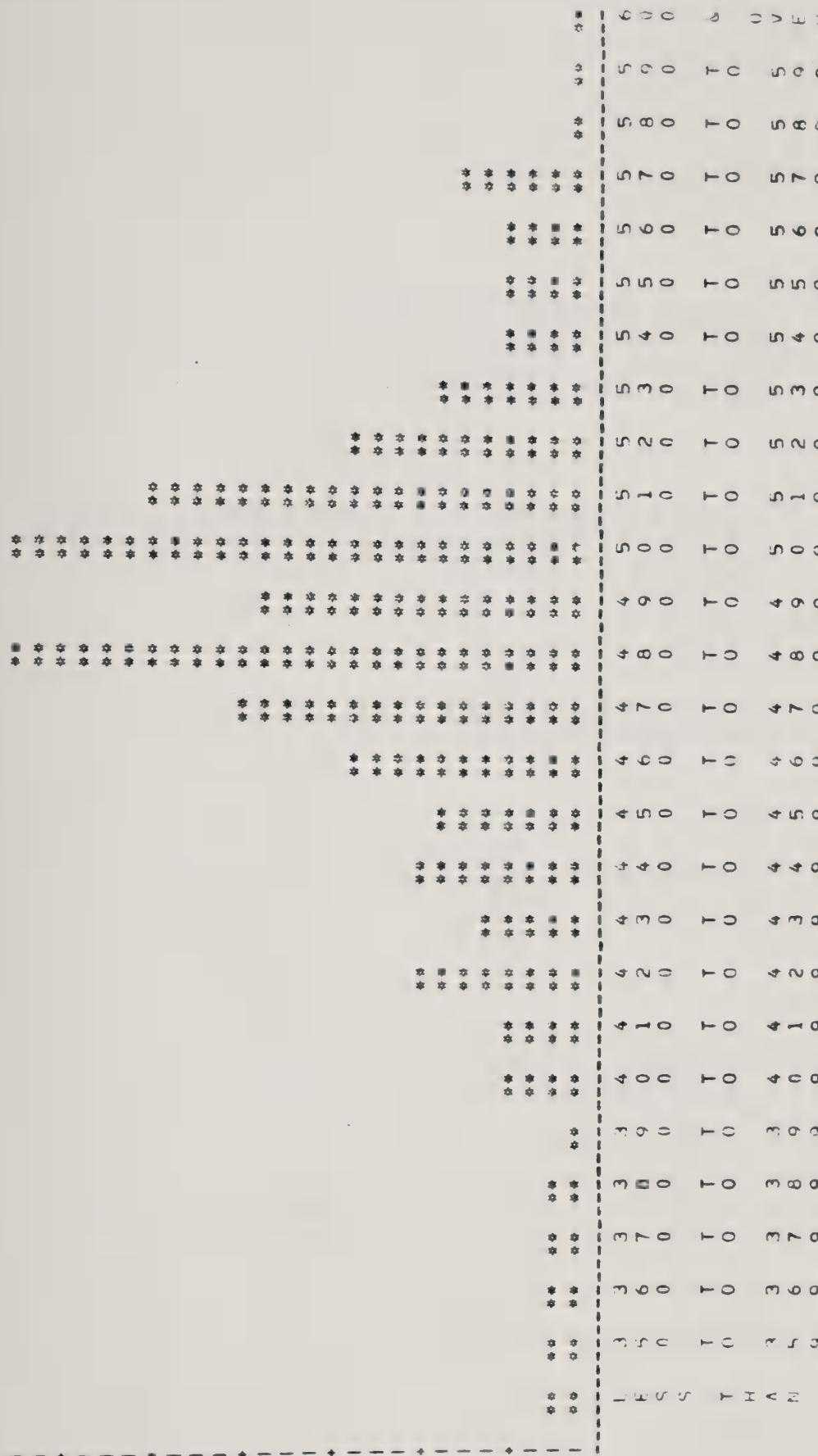
FREQUENCY OF LHS BY YEAR  
STATE=LA YEAR=1977-78

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
380	10	389	2	1.587
400	10	409	5	3.968
410	10	419	3	2.381
420	10	429	4	3.175
430	10	439	1	0.794
440	10	449	4	3.175
450	10	459	4	3.175
460	10	469	3	3.175
470	10	479	2	2.381
480	10	489	7	1.587
490	10	499	17	5.556
500	10	509	29	13.492
510	10	519	22	23.016
520	10	529	13	17.460
530	10	539	6	10.317
540	10	549	1	4.762
550	10	559	1	0.794
560	10	569	2	0.794
			126	98.413
			1.587	100.000



COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=LA YEAR=1978-79

## PERCENTAGE BAR CHART



LH5



FREQUENCY OF LHS BY YEAR  
STATE=LA YEAR=1978-79

III-36

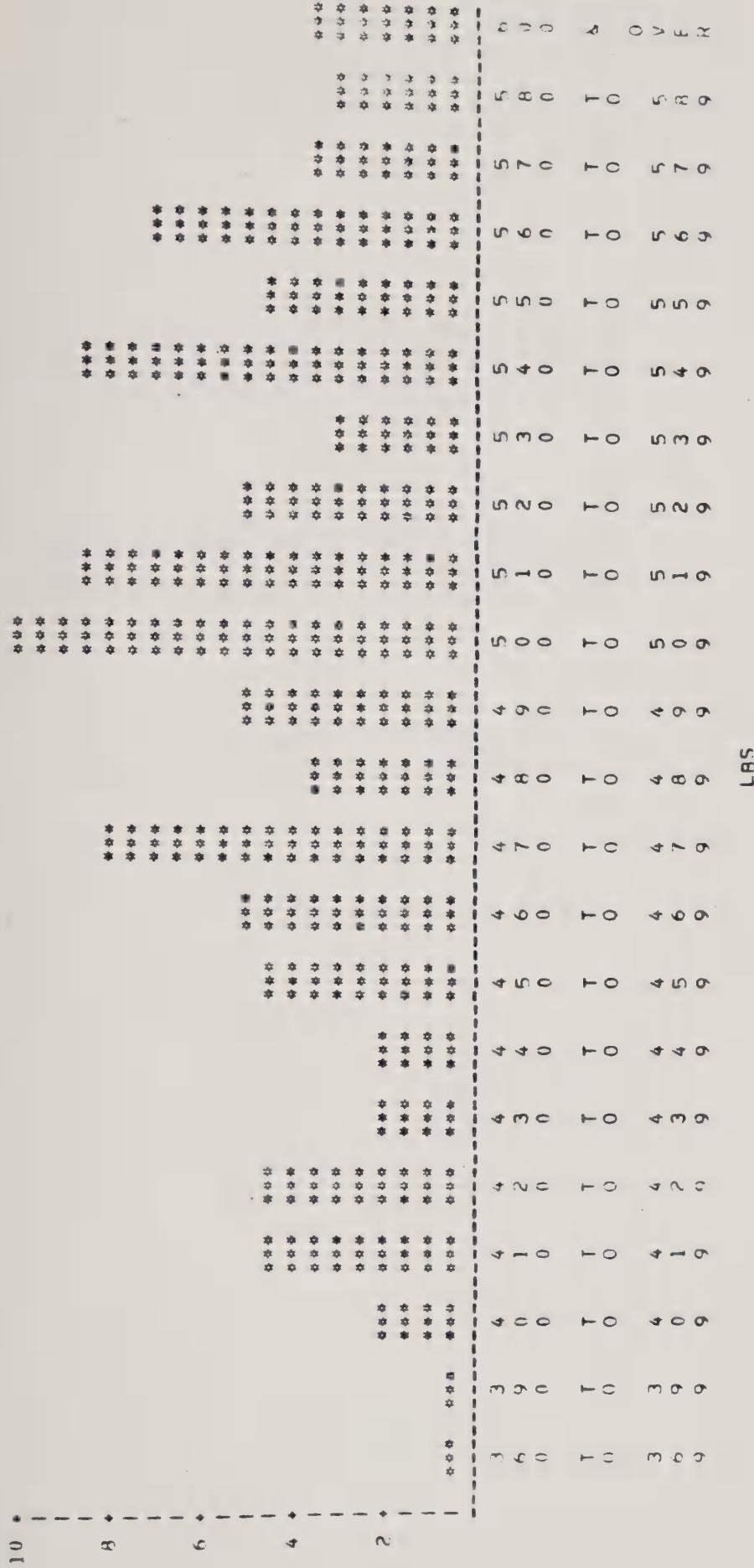
LHS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
350	T0 359	4	4	1.093	1.093
360	T0 369	3	7	0.820	1.913
370	T0 379	4	11	1.093	3.005
380	T0 389	3	14	0.820	3.825
390	T0 399	3	17	0.820	4.645
400	T0 409	1	18	0.273	4.918
410	T0 419	8	26	2.186	7.104
420	T0 429	8	34	2.186	9.290
430	T0 439	15	49	4.098	13.388
440	T0 449	9	58	2.459	15.847
450	T0 459	14	72	3.825	19.672
460	T0 469	13	85	3.552	23.224
470	T0 479	21	106	5.738	28.962
480	T0 489	29	135	7.923	36.885
490	T0 499	48	183	13.115	50.000
500	T0 509	27	210	7.377	57.377
510	T0 519	47	257	12.842	70.219
520	T0 529	36	293	9.836	80.055
530	T0 539	20	313	5.464	85.519
540	T0 549	13	326	3.552	89.071
550	T0 559	8	334	2.186	91.257
560	T0 569	8	342	2.186	93.443
570	T0 579	7	349	1.913	95.355
580	T0 589	11	360	3.005	98.361
590	T0 599	2	362	0.546	98.907
600 & OVR		2	364	0.546	99.454
		366		0.546	100.000



COTTON HALF WEIGHTS BY STATE & YEAR  
STATE=LA YFAR=1979-80

## PERCENTAGE BAR CHART

PERCENTAGE





FREQUENCY OF LBS BY YEAR  
STATE=LA YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	1	1	0.725	0.725
370 TO 379	1	2	0.725	1.449
380 TO 389	3	5	2.174	3.623
390 TO 399	6	11	4.348	7.971
400 TO 419	6	17	4.348	12.319
410 TO 429	3	20	2.174	14.493
420 TO 439	3	23	2.174	16.667
430 TO 449	3	29	4.348	21.014
440 TO 449	6	36	5.072	26.087
450 TO 459	7	47	7.971	34.058
460 TO 469	11	52	3.623	37.681
470 TO 479	5	59	5.072	42.754
480 TO 489	14	73	10.145	52.899
490 TO 499	14	85	8.696	61.594
500 TO 509	12	92	5.072	66.667
510 TO 519	12	96	2.899	69.565
520 TO 529	7	108	8.696	76.261
530 TO 539	4	12	114	4.348
540 TO 549	4	10	124	7.246
550 TO 559	6	12	129	3.623
560 TO 569	6	4	133	2.899
570 TO 579	5	5	138	3.623
580 TO 589	4	5	OVER	100.000
600 & OVER	1	1		



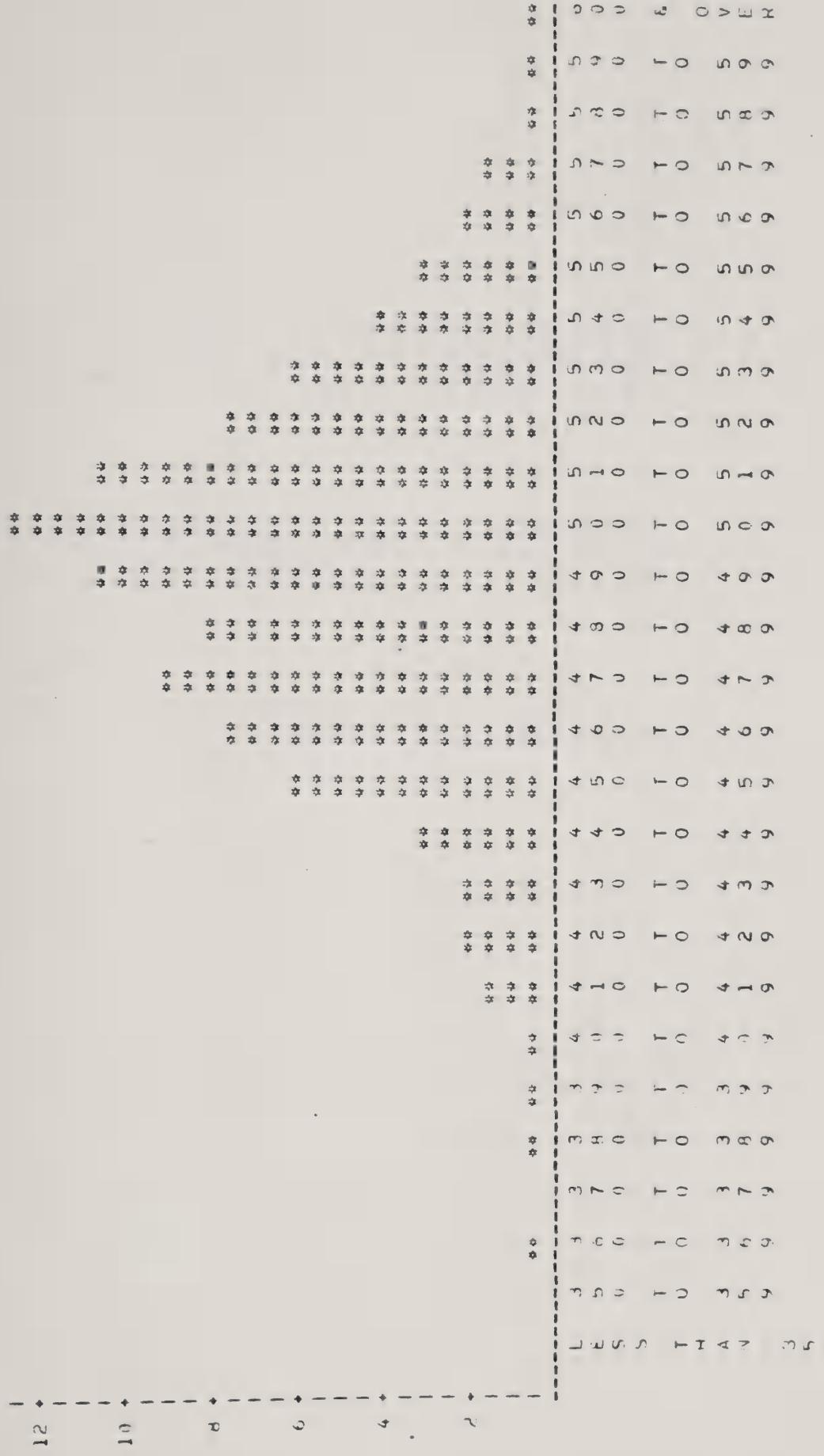
SECTION B-5: cotton bale weights for Missouri, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



COTTON HALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=MO

PERCENTAGE BAR CHART

PERCENTAGE



LHS



FREQUENCY OF LHS BY STATE  
STATE=MO

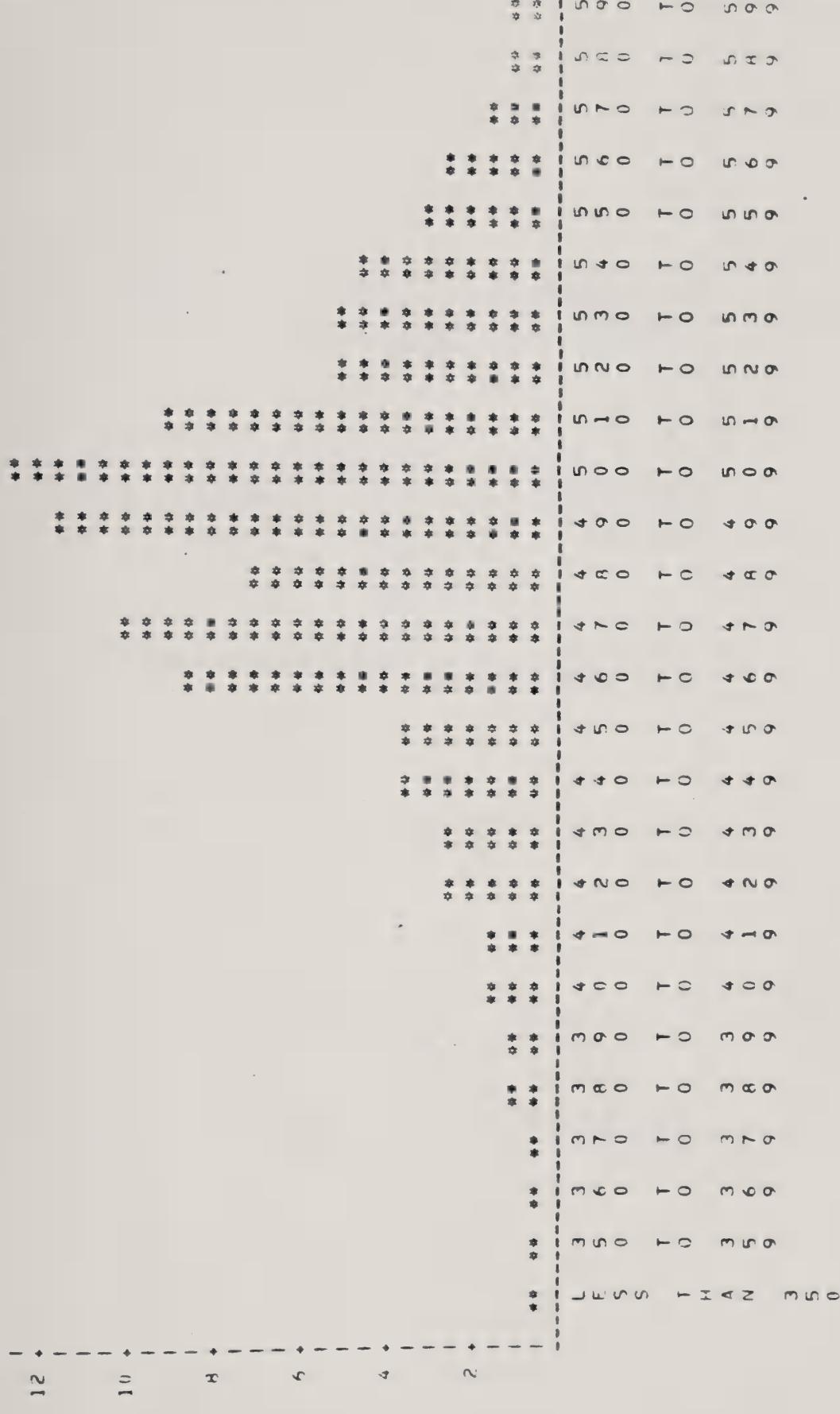
III-40

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	2	2	0.208	0.208
350 TO 359	1	3	0.104	0.312
360 TO 369	3	6	0.313	0.625
370 TO 379	2	8	0.208	0.833
380 TO 389	6	14	0.625	1.458
390 TO 399	5	19	0.521	1.979
400 TO 409	7	26	0.729	2.708
410 TO 419	16	42	1.667	4.375
420 TO 429	18	60	1.875	6.250
430 TO 439	18	78	1.875	8.125
440 TO 449	31	109	3.229	11.354
450 TO 459	56	165	5.833	17.187
460 TO 469	71	236	7.396	24.583
470 TO 479	84	320	8.750	33.333
480 TO 489	77	397	8.021	41.354
490 TO 499	100	497	10.417	51.771
500 TO 509	118	615	12.292	64.062
510 TO 519	101	716	10.521	74.583
520 TO 529	70	786	7.292	81.875
530 TO 539	57	843	5.938	87.812
540 TO 549	38	881	3.958	91.771
550 TO 559	31	912	3.229	95.000
560 TO 569	19	931	1.979	96.979
570 TO 579	13	944	1.354	98.333
580 TO 589	5	949	0.521	98.854
590 TO 599	4	953	0.417	99.271
600 & OVER	7	960	0.729	100.000



## PERCENTAGE BAR CHART

PERCENTAGE



LBS



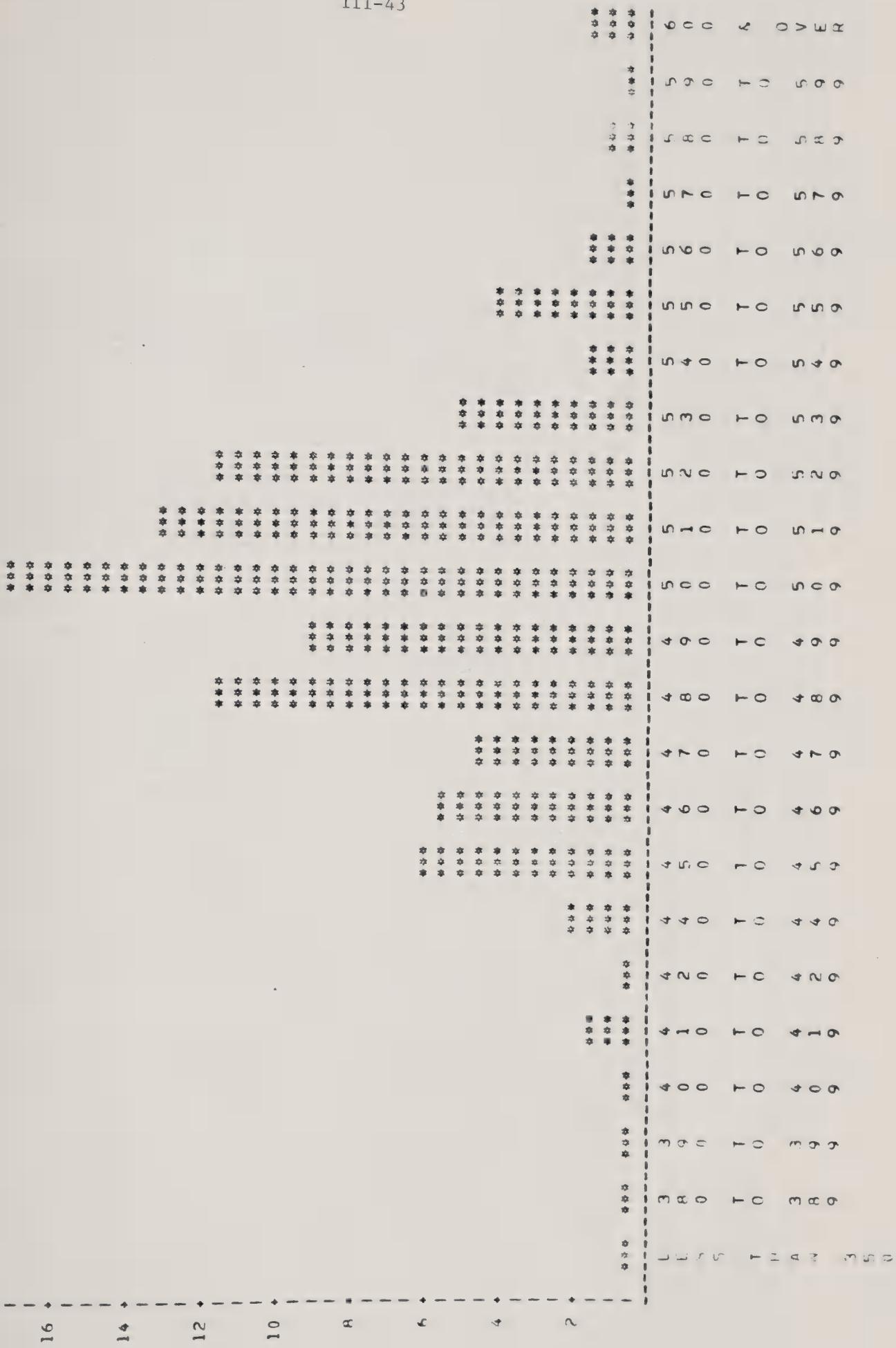
FREQUENCY OF LHS BY YEAR  
STATE=MU YEAR=1977-78

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	1	1	0.286	0.286
350 TO 359	1	2	0.286	0.571
360 TO 369	2	4	0.571	1.143
370 TO 379	2	6	0.571	1.714
380 TO 389	3	9	0.357	2.571
390 TO 399	3	12	0.857	3.429
400 TO 409	5	17	1.429	4.857
410 TO 419	6	23	1.714	6.571
420 TO 429	6	31	2.286	8.857
430 TO 439	8	39	2.286	11.143
440 TO 449	12	51	3.429	14.571
450 TO 459	13	64	3.714	18.286
460 TO 469	30	94	8.571	26.857
470 TO 479	35	129	10.000	36.857
480 TO 489	25	154	7.143	44.000
490 TO 499	41	195	11.714	55.714
500 TO 509	44	239	12.571	68.286
510 TO 519	32	271	9.143	77.429
520 TO 529	18	289	5.143	82.571
530 TO 539	17	306	4.657	87.429
540 TO 549	15	321	4.286	91.714
550 TO 559	10	331	2.857	94.571
560 TO 569	8	339	2.286	96.857
570 TO 579	5	344	1.429	98.286
580 TO 589	3	347	0.857	99.143
590 TO 599	3	350	0.857	100.000



COTTON HALE WEIGHTS BY STATE & YEAR  
STATE=MO YEAR=1978-79

## PERCENTAGE BAR CHART





FREQUENCY OF LBS BY YEAR  
STATE=MU YEAR=1978-79

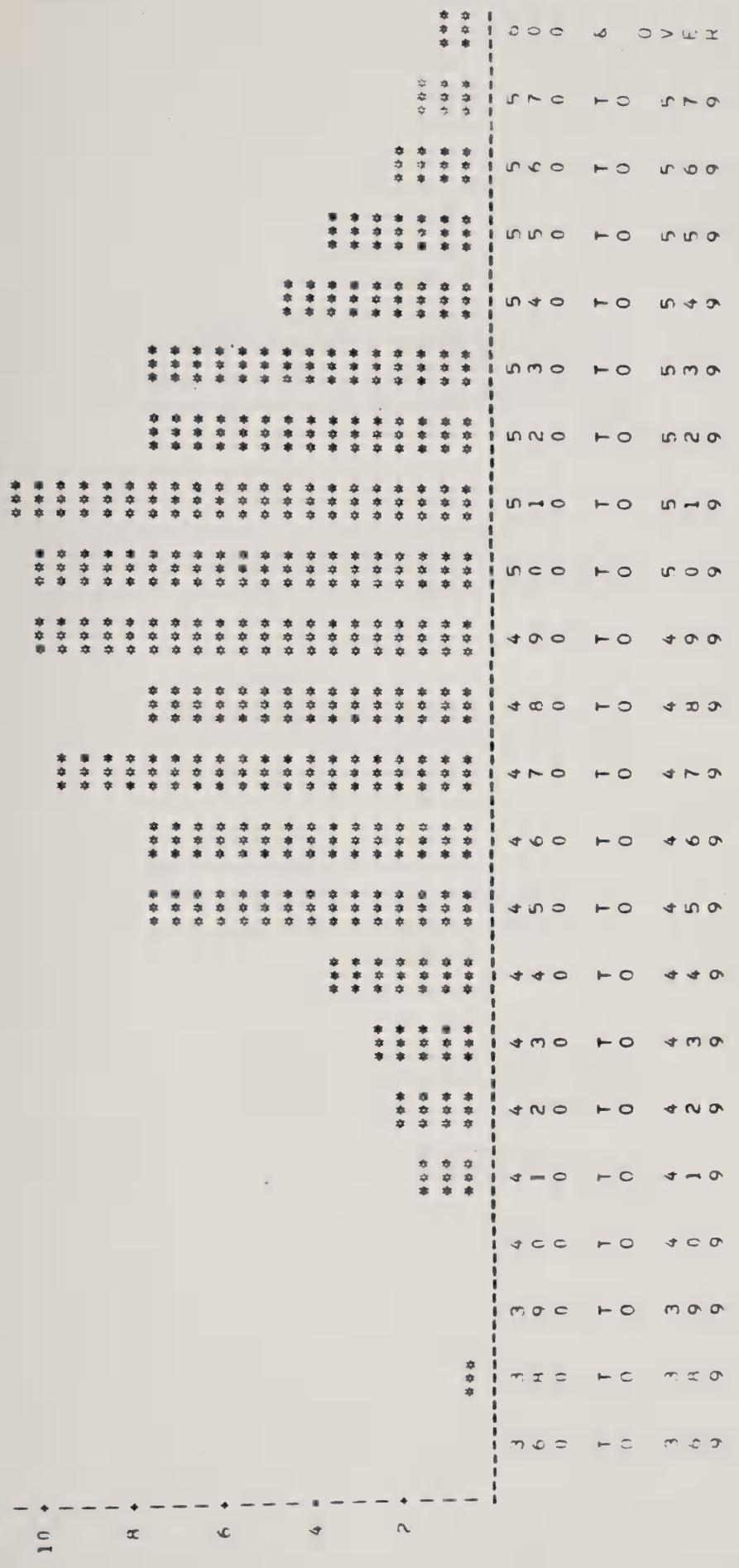
III-44

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	1	1	0.543	0.543
340 TO 349	1	2	0.543	1.087
350 TO 359	1	3	0.543	1.630
360 TO 409	1	4	0.543	2.174
410 TO 419	3	7	1.630	3.804
420 TO 429	1	8	0.543	4.348
430 TO 449	4	12	2.174	6.522
450 TO 459	11	23	5.978	12.500
460 TO 469	10	33	5.435	17.935
470 TO 479	8	41	4.348	22.283
480 TO 489	21	62	11.413	33.696
490 TO 499	17	79	9.239	42.935
500 TO 509	31	110	16.848	59.783
510 TO 519	24	134	13.043	72.826
520 TO 529	21	155	11.413	84.239
530 TO 539	9	164	4.891	89.130
540 TO 549	3	167	1.630	90.761
550 TO 559	7	174	3.804	94.565
560 TO 559	3	177	1.630	96.196
570 TO 579	1	178	0.543	96.739
580 TO 589	2	180	1.087	97.826
590 TO 599	1	181	0.543	98.370
600 & OVER	3	184	1.630	100.000



COTTON BAILE WEIGHTS BY STATE & YEAR  
STATE = MO YEAR = 1919-40

### PERCENTAGE HAT CHART





FREQUENCY OF LBS BY YEAR  
STATE=MO YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360	10	369	1	0.235
380	10	389	2	0.469
390	10	399	1	0.235
400	10	409	1	0.235
410	10	419	7	1.174
420	10	429	9	1.643
430	10	439	10	2.113
440	10	449	15	2.347
450	10	459	32	4.930
460	10	469	31	7.277
470	10	479	41	10.798
480	10	489	31	12.617
490	10	499	42	15.436
500	10	509	43	17.277
510	10	519	45	19.113
520	10	529	31	20.930
530	10	539	31	22.777
540	10	549	20	25.587
550	10	559	14	27.347
560	10	569	8	29.113
570	10	579	7	30.930
600 & OVER		426	4	100.000

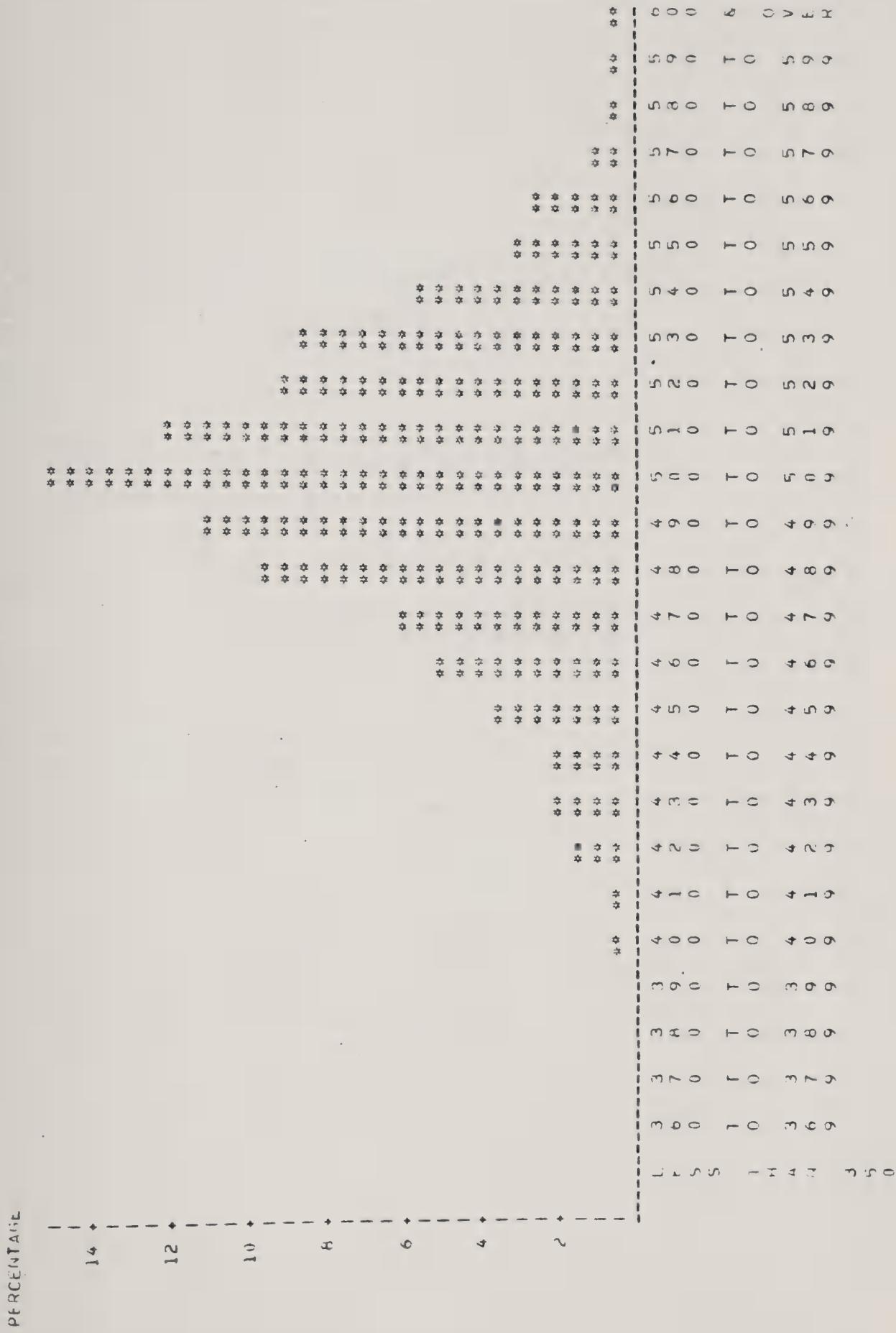


SECTION B-6: cotton bale weights for New Mexico, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



### PERCENTAGE BAR CHART

COTTON SALE WEIGHTS FOR 1977-1980 HY STATE  
STATE = NM





FREQUENCY OF LHS BY STATE  
STATE=NM

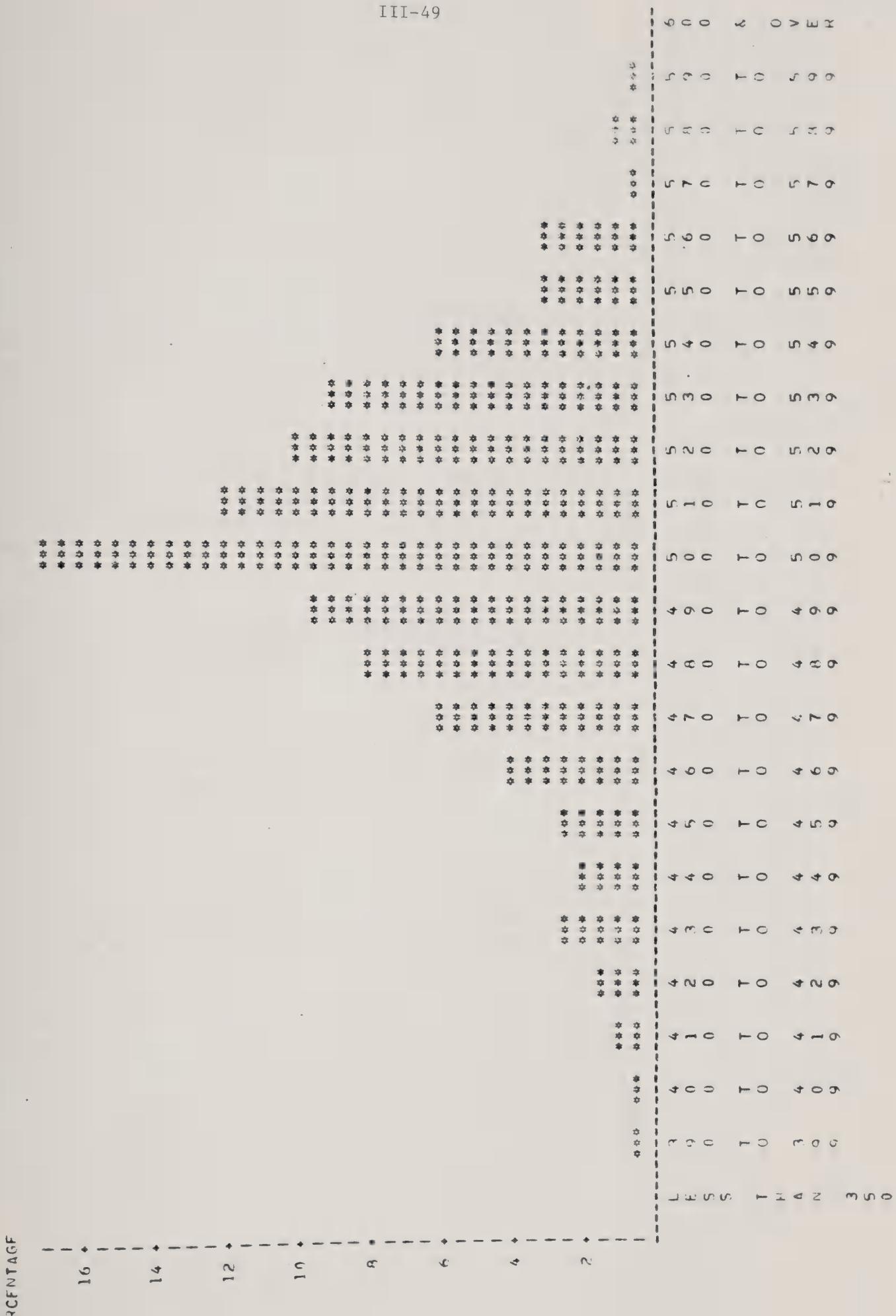
II-48

LHS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	2	2	2	0.118	0.118
370 TO 379	1	3	3	0.059	0.176
380 TO 389	1	4	4	0.059	0.235
390 TO 399	3	7	7	0.176	0.412
400 TO 409	4	11	11	0.235	0.647
410 TO 419	7	18	18	0.412	1.058
420 TO 429	10	28	28	0.588	1.646
430 TO 439	25	53	53	1.470	3.116
440 TO 449	32	85	85	1.881	4.997
450 TO 459	38	123	123	2.234	7.231
460 TO 469	62	185	185	3.645	10.876
470 TO 479	83	268	268	4.879	15.755
480 TO 489	105	373	373	6.173	21.923
490 TO 499	158	531	531	9.289	31.217
500 TO 509	187	718	718	10.994	42.210
510 TO 519	252	970	970	14.815	57.025
520 TO 529	208	1178	1178	12.228	69.253
530 TO 539	155	1333	1333	9.112	78.366
540 TO 549	139	141	141	14.74	86.655
550 TO 559	97	1571	1571	5.703	92.357
560 TO 569	51	1622	1622	2.998	95.356
570 TO 579	41	1663	1663	2.410	97.766
580 TO 589	15	1678	1678	0.882	98.648
590 TO 599	10	1688	1688	0.588	99.236
600 & OVER	8	1696	1696	0.470	99.706
	5	1701	1701	0.294	100.000



COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=NM YEAR=1977-78

### PERCENTAGE RAR CHART





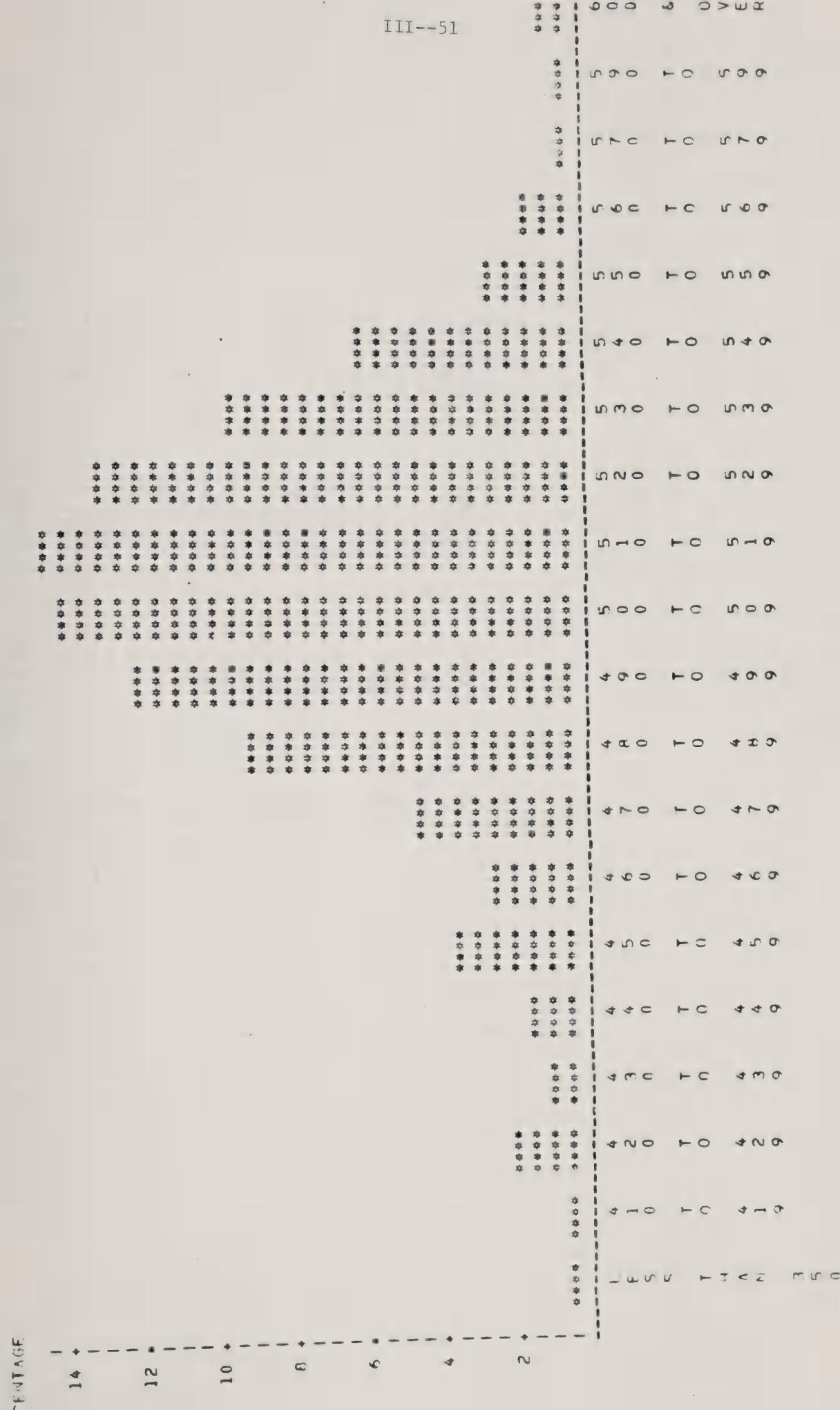
FREQUENCY OF LRS HY YEAR  
STATE=NM YEAR=1977-78

LRS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LFSS THIN 350				
390 TO 399	1	1	0.134	0.134
400 TO 409	2	3	0.269	0.403
410 TO 419	4	7	0.538	0.941
420 TO 429	7	14	0.941	1.882
430 TO 439	11	25	1.478	3.360
440 TO 449	17	42	2.285	5.645
450 TO 459	16	58	2.151	7.796
460 TO 469	17	75	2.285	10.081
470 TO 479	29	104	3.898	13.978
480 TO 489	45	149	6.048	20.027
490 TO 499	54	208	7.930	27.957
500 TO 509	71	279	9.543	37.500
510 TO 519	126	407	17.204	54.704
520 TO 529	90	497	12.097	66.801
530 TO 539	74	571	9.946	76.747
540 TO 549	67	638	9.005	85.753
550 TO 559	45	683	6.048	91.801
560 TO 569	22	705	2.957	94.758
570 TO 579	23	728	3.091	97.849
580 TO 589	5	733	0.672	98.522
590 TO 599	6	739	0.806	99.328
600 > OVER	4	743	0.538	99.866
	1	744	0.134	100.000



COTTON RALE WEIGHTS BY STATE & YEAR  
STATE=NM YFAR=1978-19

### PERCENTAGE BAR CHART



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FREQUENCY OF LHS BY YEAR  
STATE=M STATE=M YEAR=1976-79

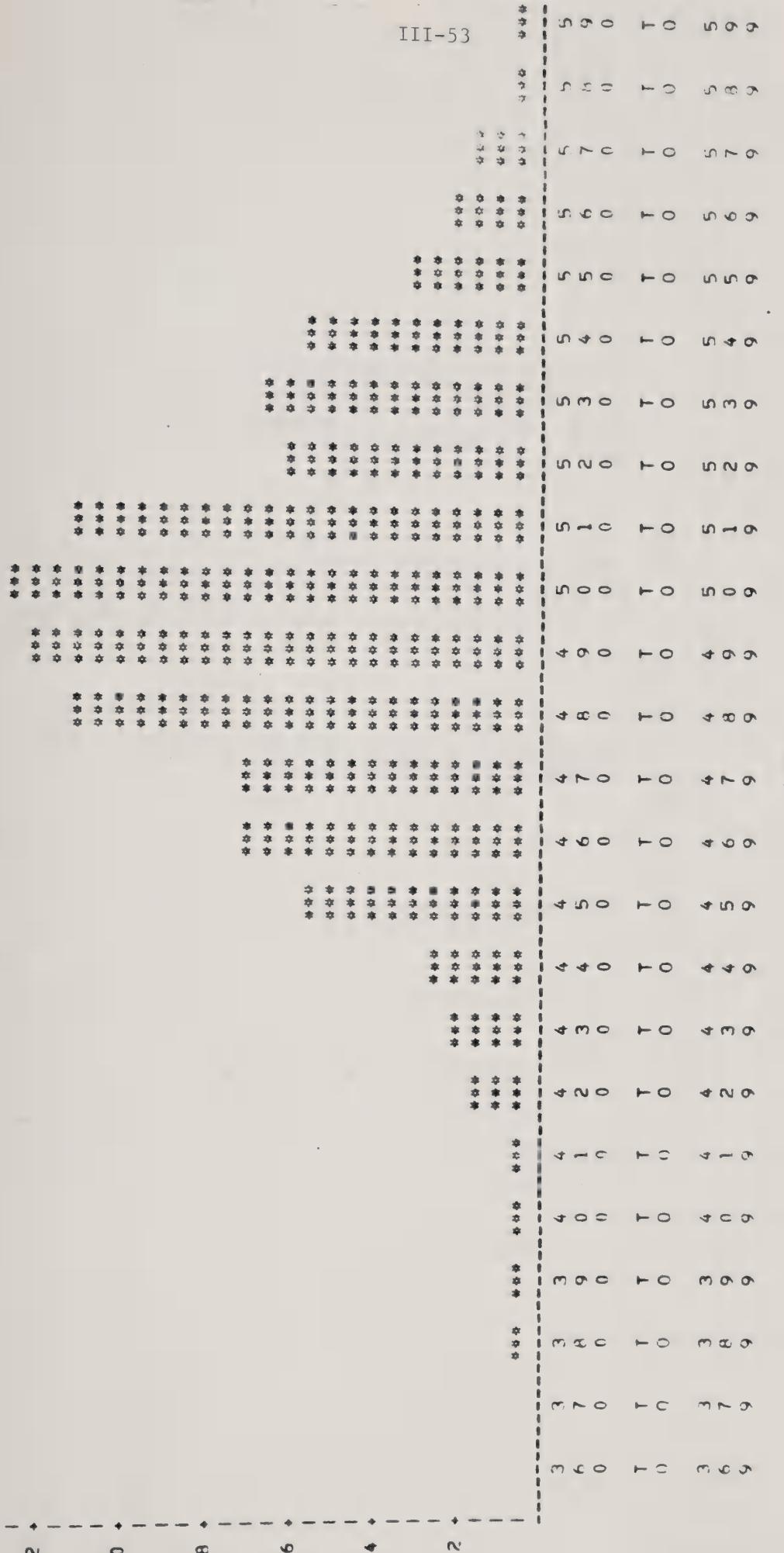
LHS,	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
410 TO 419	1	1	0.303	0.303
420 TO 429	1	2	0.303	0.606
430 TO 439	6	8	1.818	2.424
440 TO 449	3	11	0.909	3.333
450 TO 459	5	16	1.515	4.848
460 TO 469	11	27	3.333	8.182
470 TO 479	9	36	2.727	10.909
480 TO 489	15	51	4.545	15.455
490 TO 499	30	81	9.091	24.545
500 TO 509	40	121	12.121	36.667
510 TO 519	46	167	13.939	50.606
520 TO 529	44	215	14.545	65.152
530 TO 539	43	258	13.030	78.182
540 TO 549	32	290	9.697	87.879
550 TO 559	19	309	5.758	93.636
560 TO 569	9	318	2.727	96.364
570 TO 579	5	323	1.515	97.874
580 TO 589	2	325	0.606	98.485
590 TO 599	1	326	0.303	98.788
600 & OVER	4	330	1.212	100.000



COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=NM YEAR=1979-80

## PERCENTAGE BAR CHART

III-53





FREQUENCY OF LHS BY YEAR  
 STATE=NM YEAR=1979-80

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360	10	369	1	0.159
370	10	379	1	0.159
380	10	389	3	0.319
390	10	399	2	0.478
400	10	409	3	0.319
410	10	419	2	0.478
420	10	429	8	0.319
430	10	439	12	1.276
440	10	449	17	1.914
450	10	459	34	2.711
460	10	469	45	5.423
470	10	479	45	7.177
480	10	489	69	20.415
490	10	499	76	7.177
500	10	509	78	27.592
510	10	519	70	11.005
520	10	529	38	5.423
530	10	539	42	6.061
540	10	549	33	6.061
550	10	559	20	6.061
560	10	569	13	6.061
570	10	579	8	6.061
580	10	589	4	6.061
590	10	599	3	6.061
				100.000



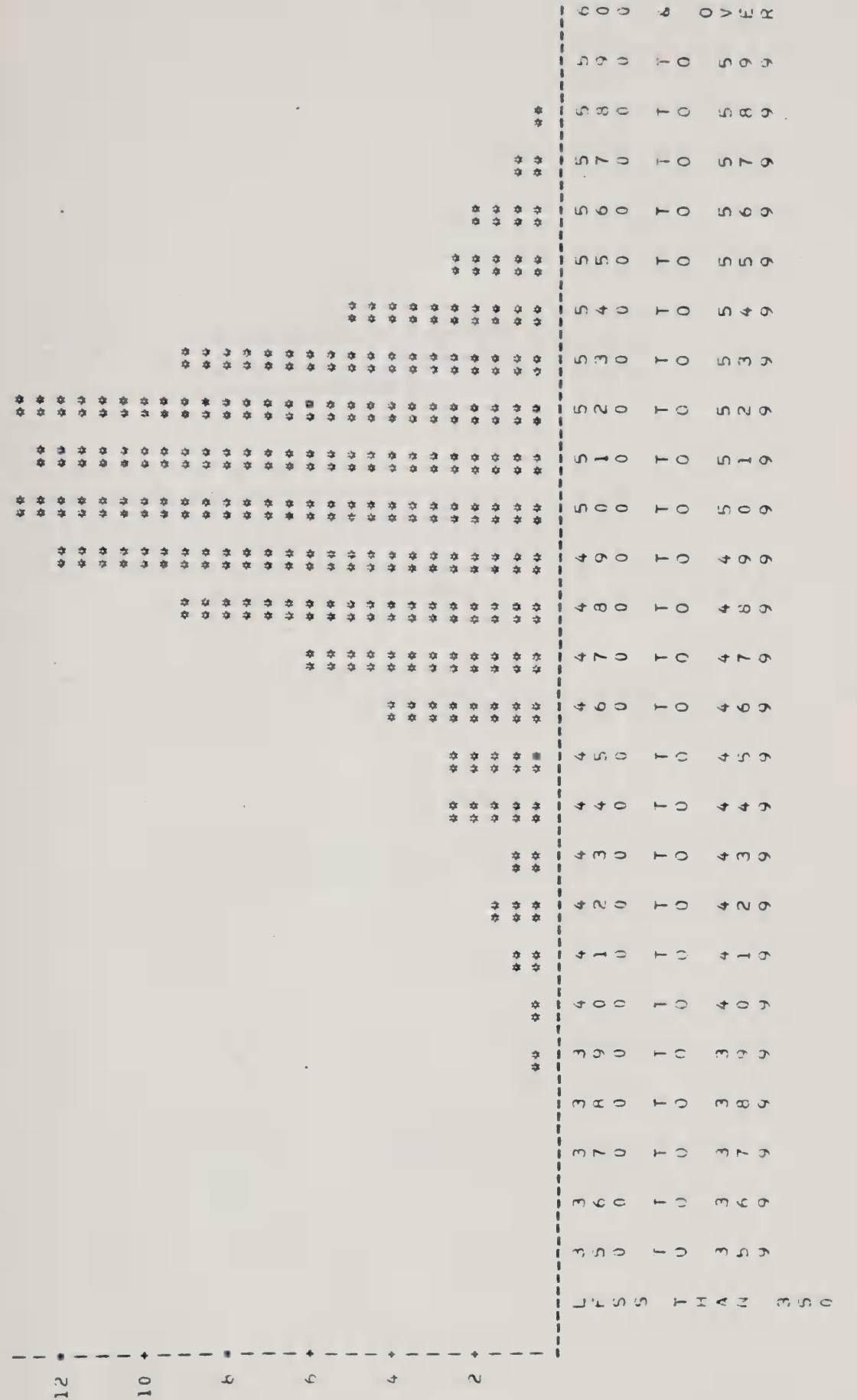
SECTION B-7: cotton bale weights for Oklahoma, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



COTTON RALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=OK

## PERCENTAGE BAR CHART

PERCENTAGE



LBS



FREQUENCY OF LHS BY STATE  
STATE=OK

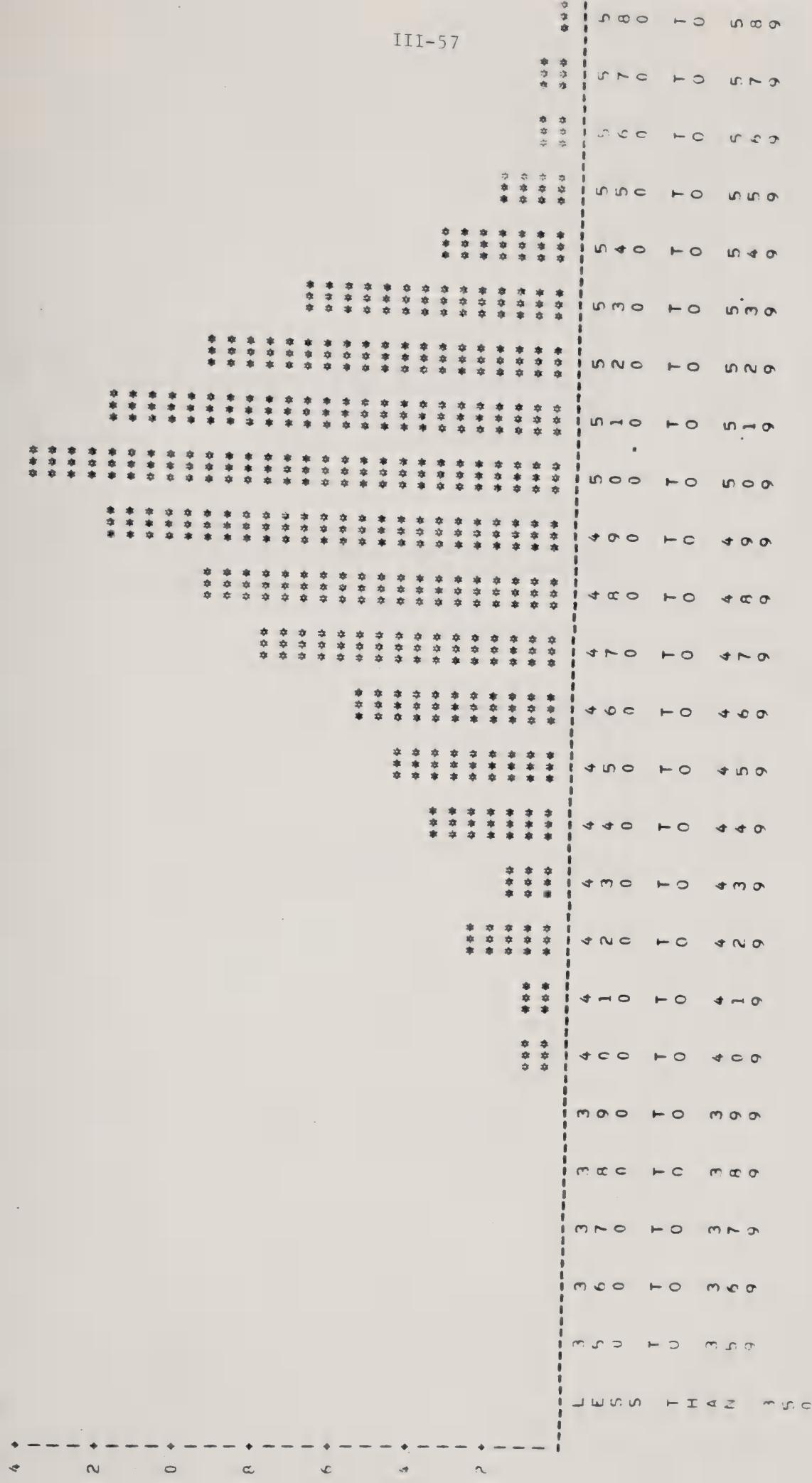
LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 399	12	12	0.244	0.244
360 TO 399	4	16	0.081	0.325
370 TO 399	7	23	0.142	0.467
380 TO 399	12	30	0.142	0.609
390 TO 399	7	42	0.244	0.853
400 TO 409	14	56	0.284	1.137
410 TO 419	30	86	0.609	1.747
420 TO 429	49	135	0.995	2.742
430 TO 439	82	217	1.665	4.407
440 TO 449	52	269	1.056	5.463
450 TO 459	115	384	2.335	7.799
460 TO 469	134	518	2.721	10.520
470 TO 479	187	705	3.798	14.318
480 TO 489	285	990	5.788	20.106
490 TO 499	451	1441	9.159	29.265
500 TO 509	580	2021	11.779	41.044
510 TO 519	645	2666	13.099	54.143
520 TO 529	626	3292	12.713	66.856
530 TO 539	634	3925	12.876	79.732
540 TO 549	444	4370	9.017	88.749
550 TO 559	253	4623	5.138	93.887
560 TO 569	132	4755	2.681	96.568
570 TO 579	90	4845	1.828	98.396
580 TO 589	46	4891	0.934	99.330
590 TO 599	22	4913	0.447	99.777
600 & OVER	7	4920	0.142	99.919
	4	4924	0.081	100.000



COTTON MALE WEIGHTS BY STATE & YEAR  
STATE=OK YEAR=1977-78

PERCENTAGE BAR CHART

III-57



LBS



FREQUENCY OF LBS BY YEAR  
 STATE=UN YEAR=1977-78

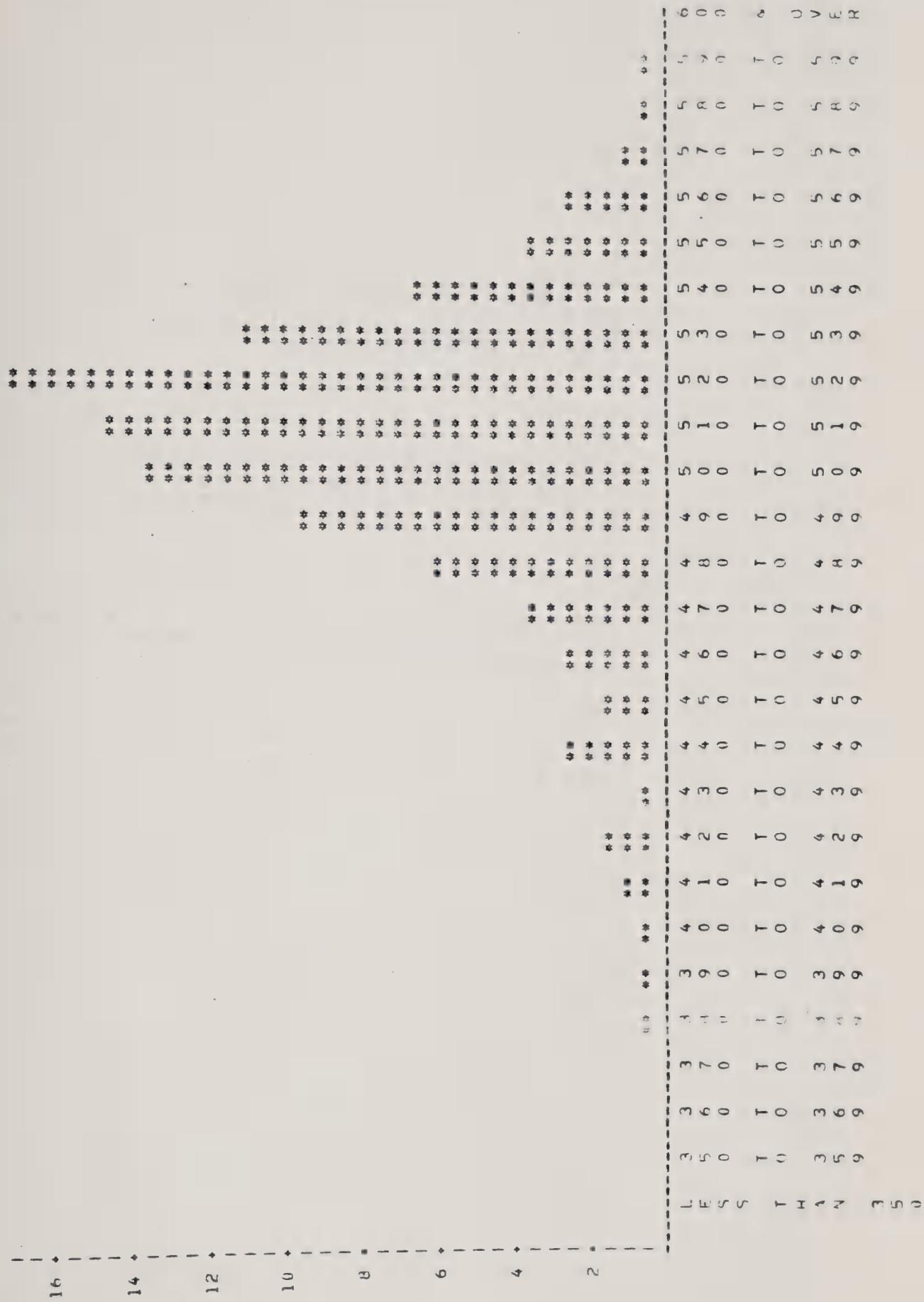
LBS	LESS THAN 350	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
350 TO 359	2	2	0.138	0.138	
360 TO 369	1	3	0.069	0.207	
370 TO 379	2	5	0.138	0.345	
380 TO 389	3	8	0.207	0.551	
390 TO 399	3	11	0.207	0.758	
400 TO 409	2	13	0.138	0.896	
410 TO 419	11	24	0.758	1.654	
420 TO 429	16	40	1.103	2.757	
430 TO 439	35	75	2.412	5.169	
440 TO 449	23	98	1.585	6.754	
450 TO 459	52	150	3.584	10.338	
460 TO 469	64	214	4.411	14.748	
470 TO 479	80	294	5.513	20.262	
480 TO 489	116	410	7.994	28.256	
490 TO 499	139	549	9.580	37.836	
500 TO 509	172	721	11.854	49.690	
510 TO 519	201	922	13.853	63.542	
520 TO 529	171	1093	11.765	75.327	
530 TO 539	141	1234	9.717	85.045	
540 TO 549	100	1334	6.892	91.937	
550 TO 559	53	1387	3.653	95.589	
560 TO 569	23	1415	1.930	97.519	
570 TO 579	17	1432	1.172	98.691	
580 TO 589	14	1446	0.965	99.655	
590 TO 599	5	1451	0.345	100.000	



COTTON HALF WEIGHTS BY STATE & YEAR  
STATE=OK YEAR=1978-79

## PERCENTAGE BAR CHART

PERCENTAGE





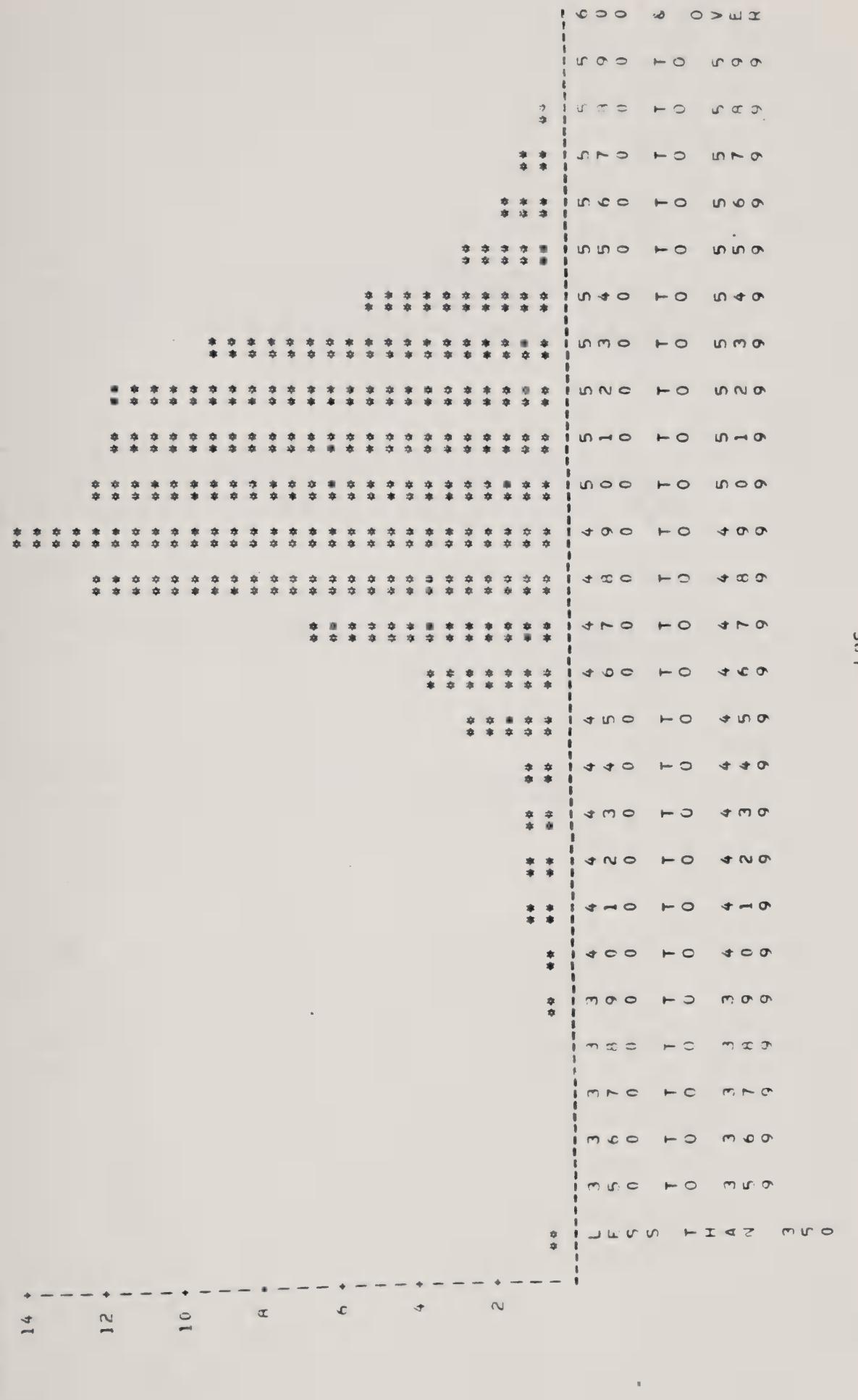
FREQUENCY OF LBS BY YEAR  
STATE=UN YEAR=1978-79

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	4	4	0.226	0.226
350 TO 359	1	5	0.056	0.282
360 TO 369	2	7	0.113	0.395
370 TO 379	2	9	0.113	0.508
380 TO 389	5	14	0.282	0.790
390 TO 399	5	19	0.282	1.072
400 TO 409	12	31	0.677	1.748
410 TO 419	17	48	0.959	2.707
420 TO 429	30	78	1.692	4.399
430 TO 439	13	91	0.733	5.133
440 TO 449	42	133	2.369	7.501
450 TO 459	25	158	1.410	8.911
460 TO 469	46	204	2.594	11.506
470 TO 479	58	262	3.271	14.777
480 TO 489	104	366	5.866	20.643
490 TO 499	157	533	9.419	30.062
500 TO 509	239	772	13.480	43.542
510 TO 519	256	1028	14.439	57.981
520 TO 529	297	1325	16.751	74.732
530 TO 539	191	1516	10.773	85.505
540 TO 549	117	1633	6.599	92.104
550 TO 559	62	1695	3.497	95.601
560 TO 569	44	1739	2.482	98.082
570 TO 579	15	1754	0.846	98.928
580 TO 589	10	1764	0.564	99.492
590 TO 599	6	1770	0.338	99.831
600 & OVER	3	1773	0.169	100.000



### PERCENTAGE BAR CHART

COTTON HALE WEIGHTS BY STATE & YEAR  
STATE=OK YFAR=1979-80





FREQUENCY OF LBS BY YEAR  
STATE=OK YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	6	6	0.353	0.353
350 TO 359	2	8	0.118	0.471
360 TO 369	3	11	0.176	0.647
370 TO 379	2	13	0.118	0.765
380 TO 389	4	17	0.235	1.000
390 TO 399	7	24	0.412	1.412
400 TO 409	7	31	0.412	1.824
410 TO 419	16	47	0.941	2.765
420 TO 429	17	64	1.000	3.765
430 TO 439	16	80	0.941	4.706
440 TO 449	21	101	1.235	5.941
450 TO 459	45	146	2.647	8.588
460 TO 469	61	207	3.588	12.176
470 TO 479	111	318	6.529	18.706
480 TO 489	208	526	12.235	30.941
490 TO 499	241	767	14.176	45.118
500 TO 509	205	972	12.059	57.176
510 TO 519	199	1171	11.706	68.882
520 TO 529	196	1367	11.529	80.412
530 TO 539	153	1520	9.000	89.412
540 TO 549	83	1603	4.882	94.294
550 TO 559	42	1645	2.471	96.765
560 TO 569	29	1674	1.706	98.471
570 TO 579	17	1691	1.000	99.471
580 TO 589	7	1698	0.412	99.882
590 TO 599	1	1699	0.059	99.941
600 & OVER	1	1700	0.059	100.000



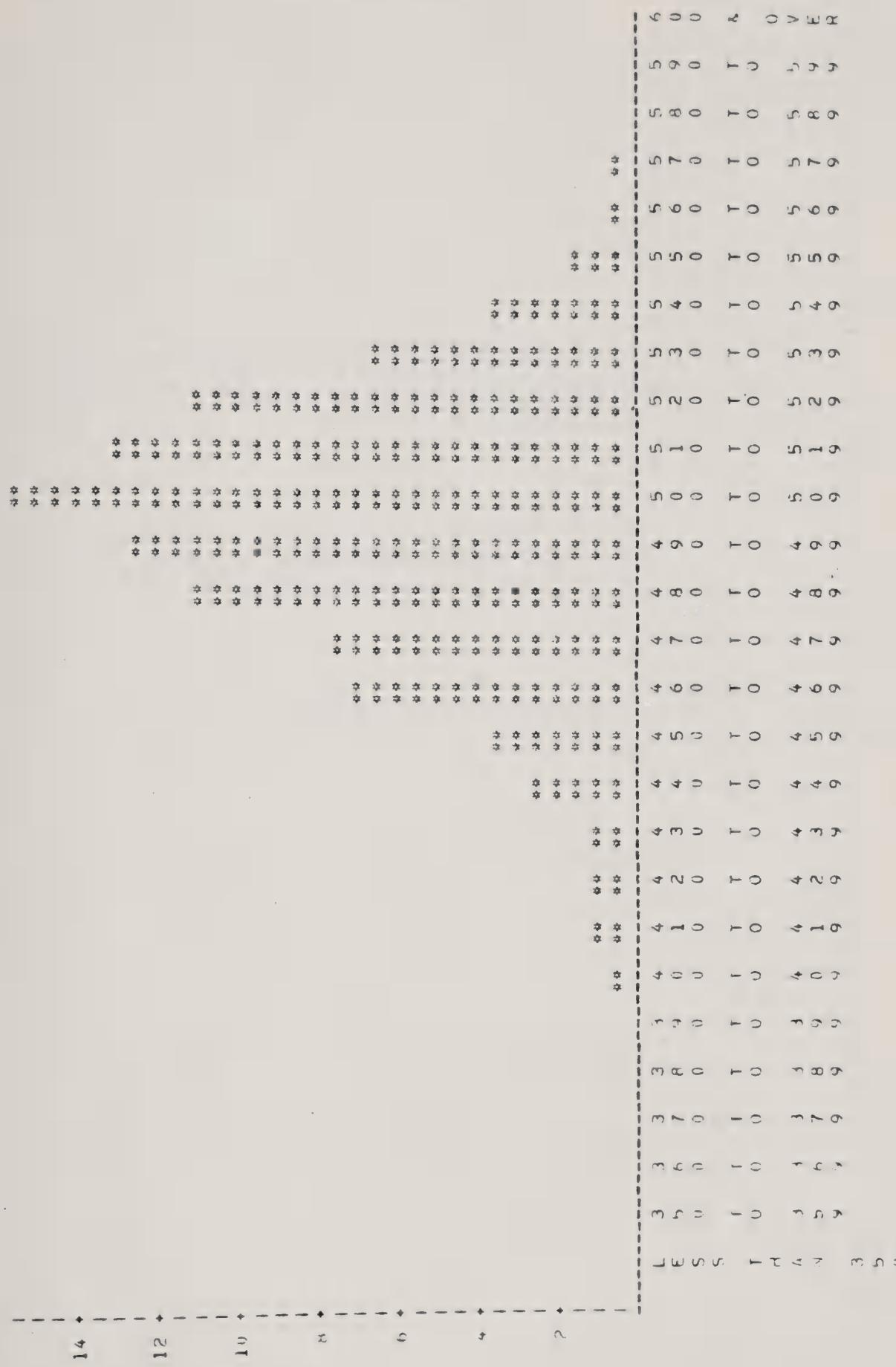
SECTION B-8: cotton bale weights for Texas, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



COTTON HALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=TX

PERCENTAGE BAR CHART

PERCENTAGE



LAS



FREQUENCY OF LBS BY STATE  
STATE=TX

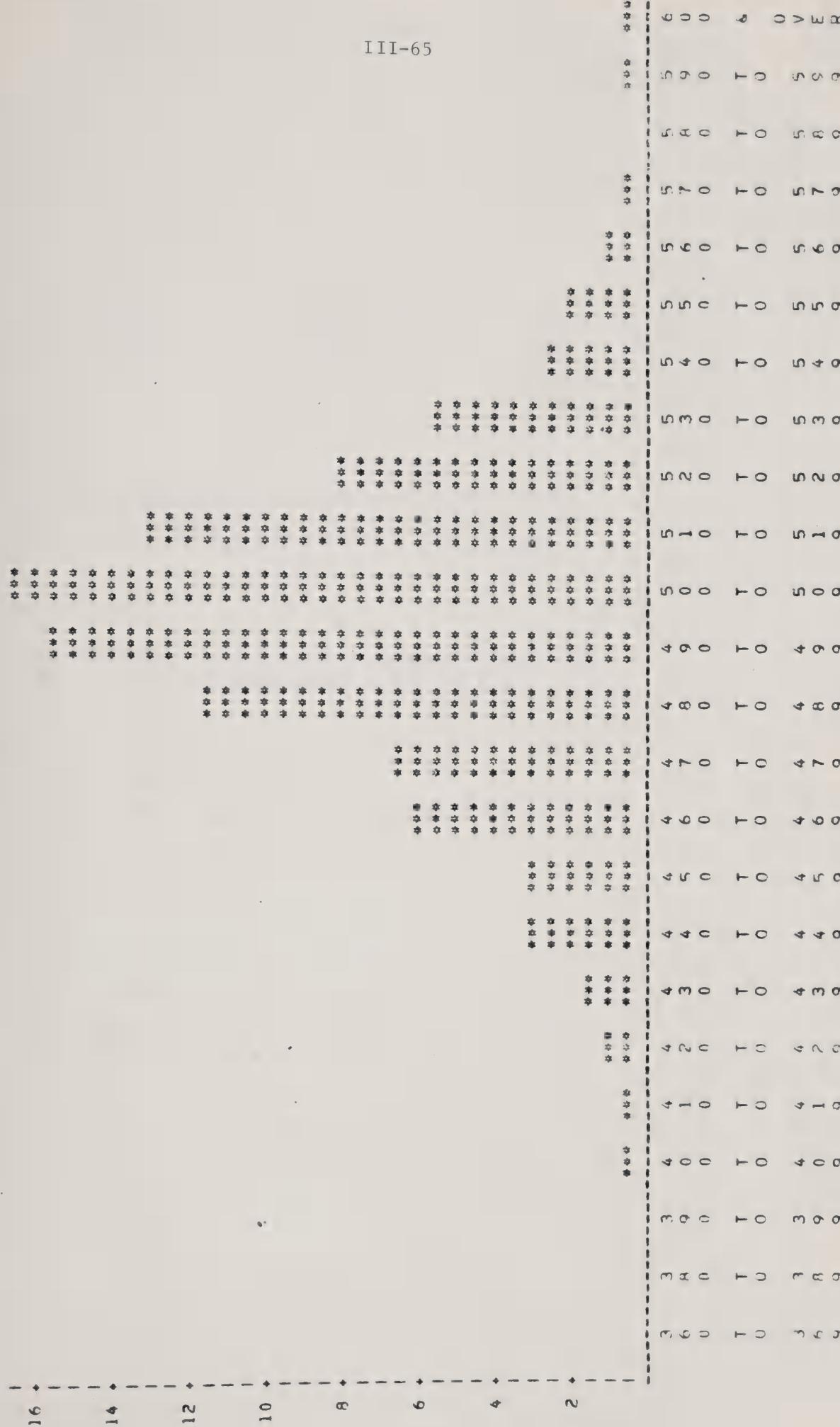
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	2	2	0.075	0.075
360 TO 369	2	4	0.075	0.149
370 TO 379	1	5	0.037	0.187
380 TO 389	2	7	0.075	0.261
390 TO 399	6	13	0.224	0.485
400 TO 409	3	16	0.112	0.597
410 TO 419	15	31	0.560	1.158
420 TO 429	23	54	0.859	2.016
430 TO 439	25	79	0.934	2.950
440 TO 449	25	104	0.934	3.883
450 TO 459	66	170	2.465	6.348
460 TO 469	94	264	3.510	9.858
470 TO 479	187	451	6.983	16.841
480 TO 489	205	656	7.655	24.496
490 TO 499	292	948	10.904	35.400
500 TO 509	331	1279	12.360	47.760
510 TO 519	412	1691	15.385	63.144
520 TO 529	352	2043	13.144	76.288
530 TO 539	294	2337	10.976	87.267
540 TO 549	176	2513	6.572	93.839
550 TO 559	91	2604	3.398	97.237
560 TO 569	91	2642	1.419	98.656
570 TO 579	14	2656	0.523	99.178
580 TO 589	10	2666	0.373	99.552
590 TO 599	3	2669	0.112	99.664
600 & OVER	4	2674	0.187	99.851
		2678	0.149	100.000



COTTON HALE WEIGHTS BY STATE & YEAR  
STATE=TX YEAR=1977-78

PERCENTAGE BAR CHART

PERCENTAGE



LBS



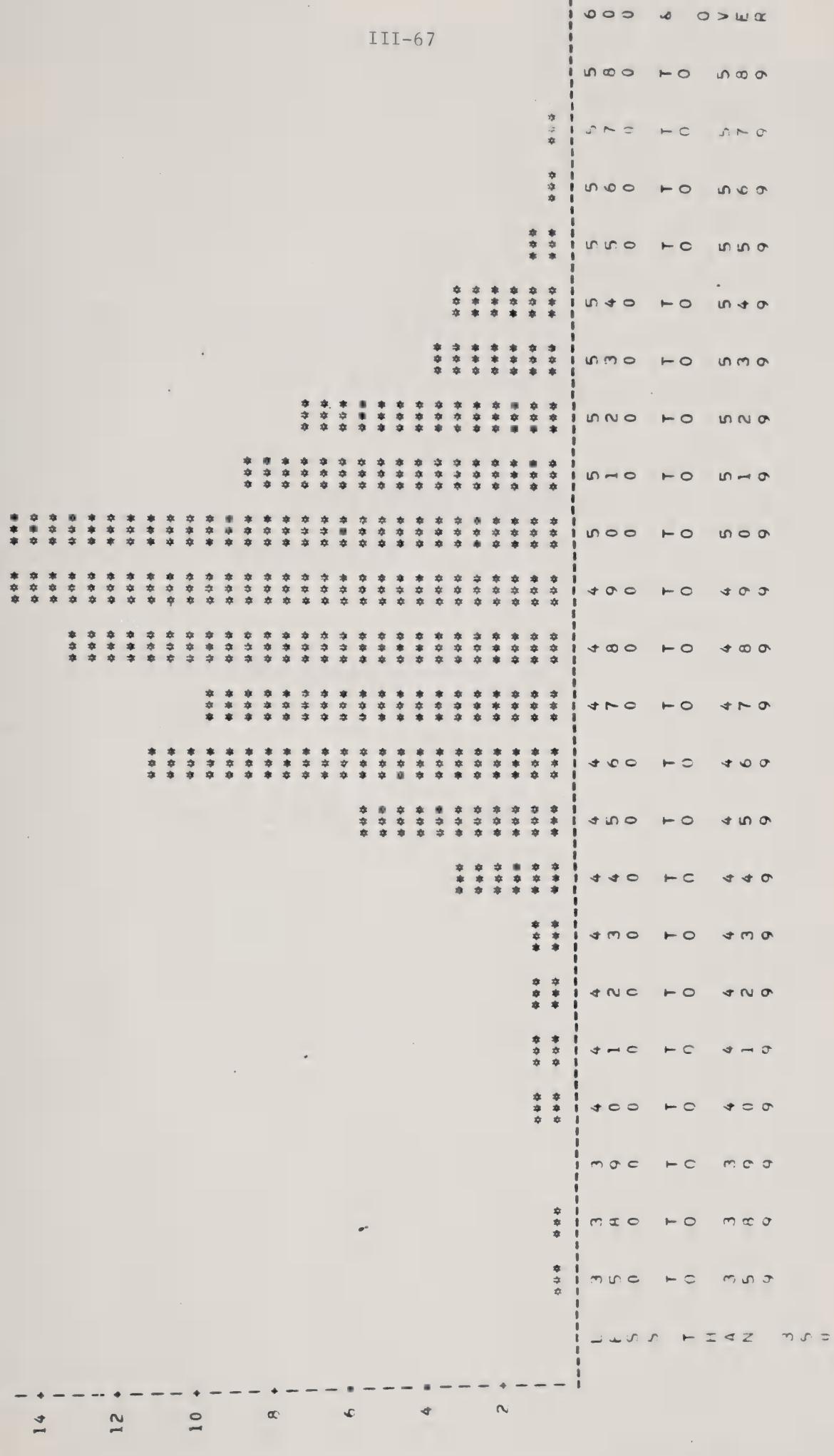
FREQUENCY OF LBS BY YEAR  
 STATE=TX YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	1	1	0.116	0.116
340 TO 349	2	3	0.232	0.348
390 TO 399	1	4	0.116	0.465
400 TO 409	5	9	0.581	1.045
410 TO 419	5	14	0.581	1.626
420 TO 429	9	23	1.045	2.671
430 TO 439	11	34	1.278	3.949
440 TO 449	26	60	3.020	6.969
450 TO 459	27	87	3.136	10.105
460 TO 469	50	137	5.807	15.912
470 TO 479	56	193	6.504	22.416
480 TO 489	100	293	11.614	34.030
490 TO 499	135	428	15.679	49.710
500 TO 509	141	569	16.376	65.085
510 TO 519	114	683	13.240	79.326
520 TO 529	71	754	8.246	87.573
530 TO 539	48	802	5.575	93.148
540 TO 549	20	822	2.323	95.470
550 TO 559	18	840	2.091	97.561
560 TO 569	7	847	0.813	98.374
570 TO 579	5	852	0.581	98.955
580 TO 589	2	854	0.232	99.187
590 TO 599	4	858	0.465	99.652
600 & OVER	3	861	0.348	100.000



### PERCENTAGE BAR CHART

III-67





FREQUENCY OF LBS BY YEAR  
STATE=TX YEAR=1978-79

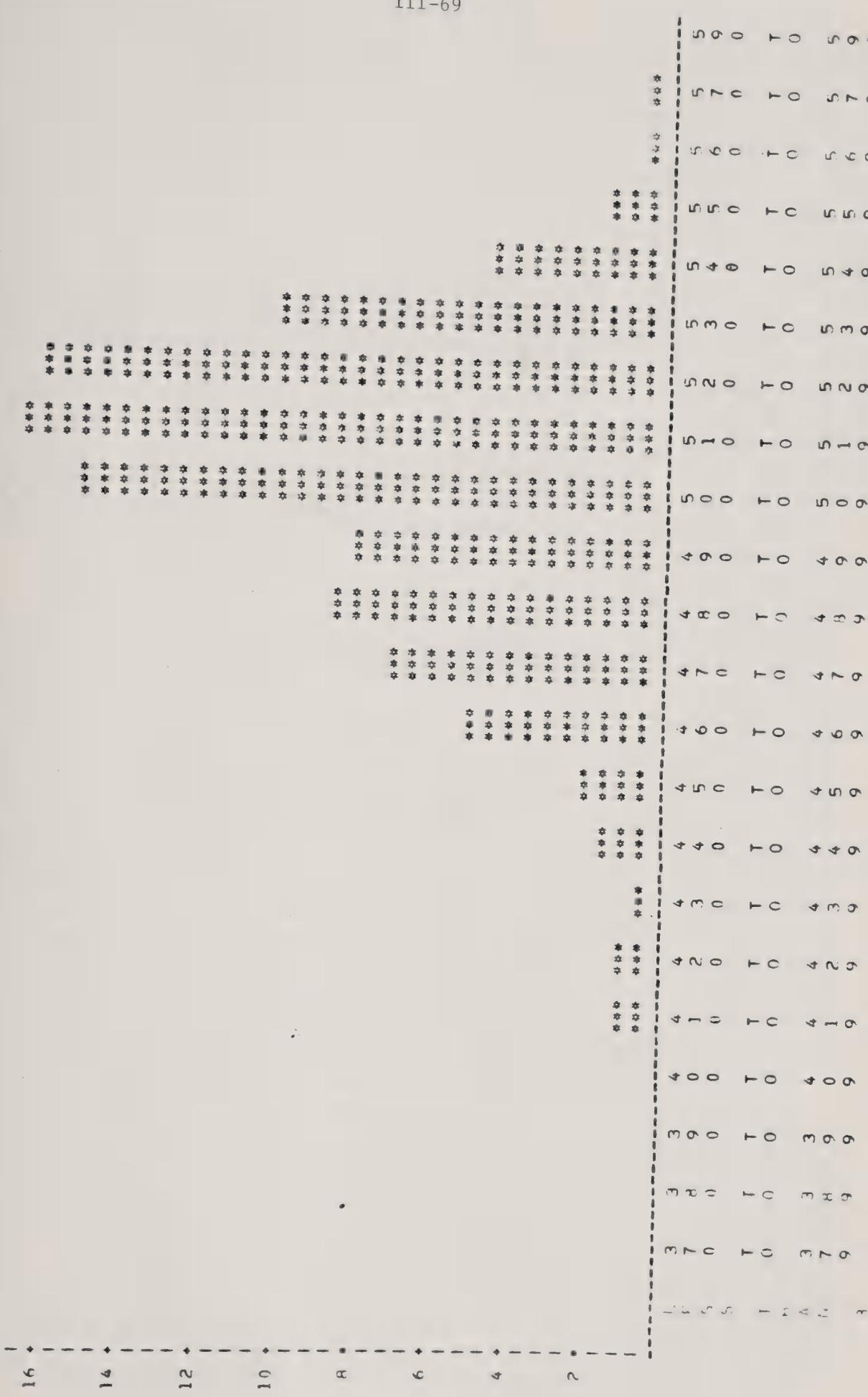
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LFSS THAN 350	1	1	0.128	0.128
350 TO 359	2	3	0.256	0.384
360 TO 384	2	5	0.256	0.639
390 TO 399	1	6	0.128	0.767
400 TO 409	8	14	1.023	1.790
410 TO 419	9	23	1.151	2.941
420 TO 429	7	30	0.895	3.836
430 TO 439	9	39	1.151	4.987
440 TO 449	22	61	2.813	7.801
450 TO 459	44	105	5.627	13.427
460 TO 469	86	191	10.997	24.425
470 TO 479	75	266	9.591	34.015
480 TO 489	102	368	13.043	47.059
490 TO 499	112	480	14.322	61.381
500 TO 509	115	595	14.706	76.087
510 TO 519	68	663	8.696	84.763
520 TO 529	56	719	7.161	91.944
530 TO 539	27	746	3.453	95.396
540 TO 549	22	768	2.813	98.210
550 TO 559	6	774	0.767	98.977
560 TO 569	4	778	0.512	99.488
570 TO 579	2	780	0.256	99.744
580 TO 589	1	781	0.128	99.872
600 & OVER	1	782	0.128	100.000



COTTON HALE WEIGHTS BY STATE & YFAR  
STATE=TX YEAR=1979-80

## PERCENTAGE BAR CHART

PERCENTAGE





FREQUENCY OF LBS BY YEAR  
STATE=IA YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LFSS THAN 350	1	1	0.097	0.097
370 TO 379	2	3	0.193	0.290
380 TO 389	2	5	0.193	0.483
390 TO 399	1	6	0.097	0.580
400 TO 409	2	8	0.193	0.773
410 TO 419	9	17	0.870	1.643
420 TO 429	9	26	0.870	2.512
430 TO 439	5	31	0.483	2.995
440 TO 449	14	49	1.739	4.734
450 TO 459	23	72	2.222	6.957
460 TO 469	51	123	4.928	11.884
470 TO 479	74	197	7.150	19.034
480 TO 489	90	287	8.696	27.729
490 TO 499	84	371	8.116	35.845
500 TO 509	156	527	15.072	50.918
510 TO 519	170	697	16.425	67.343
520 TO 529	167	864	16.135	83.476
530 TO 539	101	965	9.758	93.237
540 TO 549	49	1014	4.734	97.971
550 TO 559	14	1028	1.353	99.324
560 TO 569	3	1031	0.290	99.614
570 TO 579	3	1034	0.290	99.903
580 TO 599	1	1035	0.097	100.000







